FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

OHIO STATE UNIVERSITY
APR 2
RARY

APRIL, 1953

Piers and Terminal Warehouse Destroyed by Largest Fire in Wilmington, Del., in Recent Years. (Story on page 333.)

A CASE - SHEPPERD - MANN PUBLICATION

is Your Community protected

by the MOST EFFECTIVE resuscitating apparatus known to Science?

EMERSON Resuscitators

SIMPLE to operate, with no complicated adjustments.

SAFE for adults, children, or infants. There is no record of lung injury from the pressures used in thousands of cases in more than ten years.

EFFECTIVE The suction phase, alternating with the positive phase, helps circulation and can be of life-and-death importance, especially to victims in shock.

ACCEPTED by the American Medical Association for use by laymen (A.M.A. Journal, May 30, 1942). Relied on from coast to coast by thousands of leading hospitals and fire departments.

WRITE for our free

Medical Reference on Resuscitation

Information and Demonstration

Bulletin on a New Manual Method of Artificial Respiration

"Simplest and Safest"

J. H. EMERSON COMPANY

32 COTTAGE PARK AVENUE, CAMBRIDGE 40, MASSACHUSETTS

Specify the added PLUS of FEDERAL WARNING PROTECTION

Bruco equipped by Brumbaugh Body Co. Body streamlined into cab, rear windshield, fully enclosed rear equipment compartment and large accessible hose bed. Protected front, sides and rear with FEDERAL BEACON RAY light and two fender mounted FEDERAL COASTER SIRENS.

All fine custom-built fire-fighting equipment needs the added "plus" of Federal warning protection.

Federal warning signals, the note of authority on the streets and highways, give your apparatus visible and audible protection. The Federal Beacon Ray's flashing twin lights are visible from all sides and the Federal coaster siren's extra loud persistent voice demand the right-of-way miles ahead, alerting traffic to the positive and dangerous approach of fast moving equipment.

It has always been the custom for wise buyers of fine apparatus to specify Federal for the best in sirens and warning lights. They know that the finest in research, engineering and manufacturing goes into this dependable signal equipment for the protection of life and property.

Write today for Emergency Signal Bulletin.

specify FEDERAL SIGNALS ON ALL NEW EQUIPMENT

FEDERAL ENTERPRISES, INC.

FORMERLY: FEDERAL ELECTRIC COMPANY, INC.

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FIRE ENGINEERING

A Consolidation of FIRE AND WATER ENGINEERING. THE FIRE ENGINEER. FIRE PROTECTION *and* FIRE SERVICE

FRED SHEPPERD
Editor

ROI B. WOOLLEY
Assistant Editor

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MEMBER
Audit Bureau of Circulations
Associated Business Publications

Something for the Book!

THE value of a technical journal such as FIRE ENGINEERING may be measured in several ways, one being its length of useful life. By useful we mean by the way it is read, and kept, and re-read from cover-to-cover through the years.

● The other day we received a letter from a Connecticut fireman. It said (in part):

> "Having been a subscriber to your FIRE ENGINEERING before, for years, I would like to again have you let me know what it costs. It was $3 but everything else has gone up . . . I have quite a number of the Ques. and Ans. in a folder, which are very helpful and I look them over as often as I do FIRE ENGINEERING.
>
> "I would also like to have the copies of the books I have marked with an 'X' . . . please let me know the price on above so I may send you cash. . . ."

● The unusual thing about this testimonial is the fact that the order form enclosed with the subscriber's letter is dated just 21 years ago, and it listed books that have long been out of print.

● Twenty—or even forty years, is not such a record period for FIRE ENGINEERING's subscribers to retain—and review their copies. But it is a bit unusual for a subscriber to hold onto a printed order form and letter mailed to him with a renewal subscription blank, so long ago.

● Such sustained interest in this Journal and its books is gratifying, not only to the Publishers—but to those who consistently use its advertising pages to reach and influence the fire service.

The Publishers

FIRE ENGINEERING

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A CASE-SHEPPERD-MANN PUBLICATION
"Specialized Leadership"

FABRIC FIRE HOSE

THE ONLY EXCLUSIVE MANUFACTURER OF FIRE HOSE IN AMERICA

One, inch and three quarter and three, inch and one eighth tips. One hundred twenty five pounds nozzle pressure. 2300 Gal. Per Min. PERFECT BALANCE PERFECT CONTROL

QUALITY STANDARD OF THE INDUSTRY

FABRIC FIRE HOSE COMPANY

SANDY HOOK, CONN.

THE name behind the apparatus you invest in is vitally important. The name MAXIM is synonomous with sound, experienced apparatus engineering and building. To thousands of fire fighters the name MAXIM means dependable, efficient apparatus.

IF you have never enjoyed the advantages of MAXIM apparatus, you owe it to yourself and your men to investigate and select a MAXIM job. We produce a complete line to choose from. We invite your consulting us.

Ask about the MAXIM-MAGIRUS Short Wheelbase AERIAL LADDER. Height 100′ to 170′

MAXIM MOTOR COMPANY

MIDDLEBORO, MASS.

Americas Finest Fire Apparatus

RESEARCH KEEPS **B.F.Goodrich** FIRST IN RUBBER

Left to right: Chief Gregory, Earl Bauer, L. L. Suhemaker

A small cord makes a big difference in fire hose

LIGHTER, stronger, more flexible. That's Fire King hose, developed by B. F. Goodrich.

It's a chemically-produced fiber that makes Fire King 15% lighter, much more flexible than other fire hose. This fiber, found only in B. F. Goodrich hose, is used as filler cords—the cords that go *around* the hose and carry the load under pressure. As a result of this lighter weight and increased flexibility, Fire King is easy to handle, light to carry, and racks naturally on the truck bed.

But with all its ease in handling, BFG Fire King has strength to spare. Actual service tests prove that Fire King, tested to 600 pounds pressure, is *50% stronger* than standard hose, which is tested to only 400 pounds pressure.

Firemen in the Auxiliary Fire Department, Cairo, Illinois, (pictured above) like working with Fire King because it's easy to get on and off the truck, and because it loses little or none of its flexibility even in coldest weather. But more important to Chief R. A. Gregory is the fact that the department is getting much more service from Fire King than they did from the hose previously used. Take a tip from these penny-wise volunteer groups who are saving money with Fire King. Let a BFG Fire Hose Distributor show you why this longer-lasting hose is really your most economical buy.

The B. F. Goodrich Company
Dept. M-20, Akron, Ohio

Please have a BFG Fire Hose Distributor tell me more about Fire King hose.

Name_____

Title_____

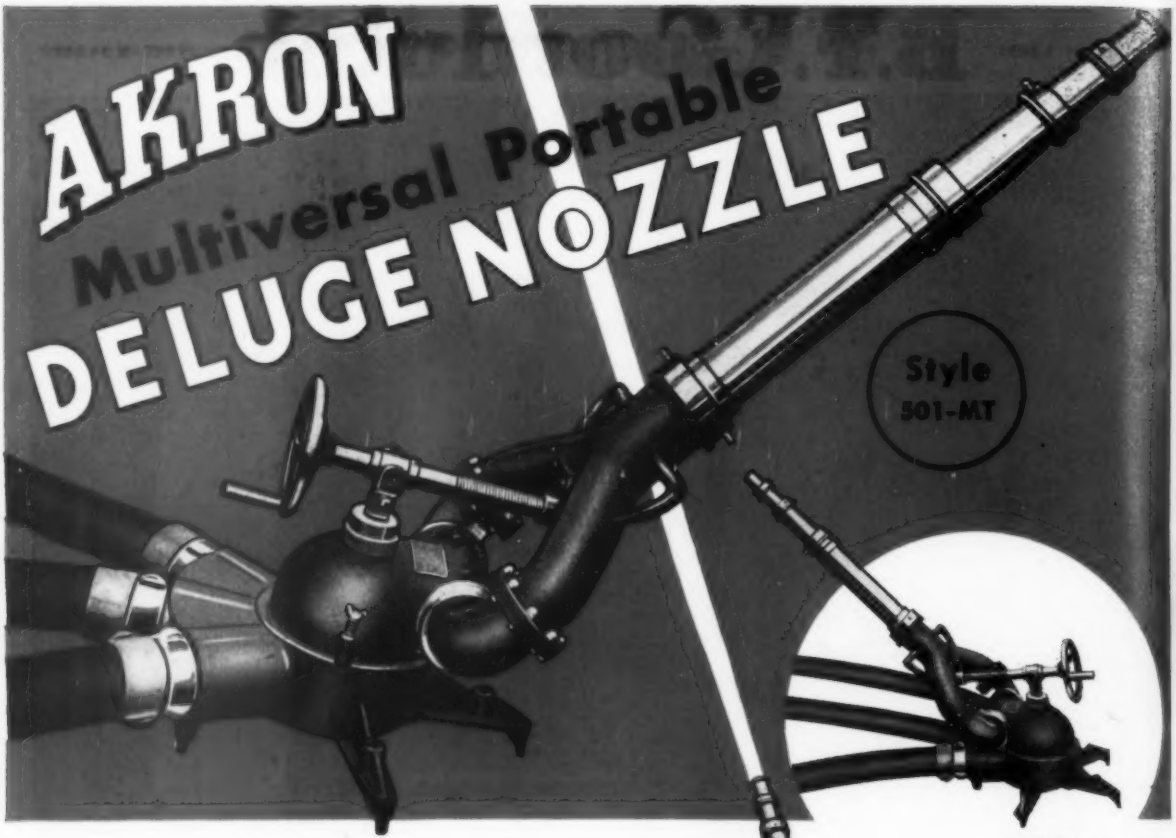
Department_____

Address_____

City_____ State_____

Fire Hose BY
B.F.Goodrich

AKRON
Multiversal Portable
DELUGE NOZZLE



TURNS IN
A COMPLETE
CIRCLE

GREATER
STREAM RANGE
AND PROJECTION

A Complete Fire Fighting Necessity of Maximum Capacity and Flexibility

- Greater stream range and projection.
- Complete circular rotation—and 90° elevation swing.
- Self sustaining. Once placed in position and under pressure, needs no further attention.
- Conserves manpower. One man with a 3-hose-line Multiversal Deluge Nozzle is equal to 6 men with 3 separate hose lines.
- Furnished with 3 or 4 inlets.
- Either hand wheel or lever control.

See your Akron Brass Distributor or write to us for complete information.

AKRON BRASS MFG. COMPANY, INC.
WOOSTER, OHIO

They Deserve the Best . . .
AKRON BRASS!

AKRON BRASS
FIRE FIGHTING EQUIPMENT

From this plant . . .

comes America's finest fire-fighting apparatus

WARD LaFRANCE pumpers

Why? Because Ward LaFrance Pumpers have proved their ability to perform under a wide range of conditions. These rugged pumpers come with engines in 130, 150, 200, 240 or 250 H.P. — deliver the weight-to-horsepower ratio so necessary for quick get-aways and climbing hills.

Each Ward LaFrance Pumper is equipped with a Waterous split housing pump — surplus gallonage that far exceeds rated capacity — flat horizontal booster tank—exceptional hose capacity—plus other equally famous Ward LaFrance features.

WRITE FOR BULLETIN Get full details on Ward LaFrance Fire Apparatus — send for the new, illustrated bulletin today. Then, when you're ready to select new equipment, you'll have all the facts on hand.

Across America — in cities large and small — you'll find Ward LaFrance Pumpers in service. For more than 30 years, they've been a familiar sight on the nation's fire-fighting scene.

WARD LaFRANCE
TRUCK CORPORATION

Fire Apparatus Manufacturers for over 30 Years

GENERAL OFFICE & FACTORY: Grand Central Avenue, Elmira, N.Y. *Tel. 3-5631*

DIRECT FACTORY BRANCH: 139th Street & Bruckner Blvd., New York 54, N.Y. *Tel. CYpress 2-3300*

EXPORT: Ward LaFrance International, Inc., Elmira, N.Y., U.S.A.
Cable Address: "WARDTRUCK"

PROVED PARTNER for fire fighters!

International L-306 which recently joined the Allendale fire station at Oakland, California. It is powered by a Hall-Scott model HS-480 engine.

International fire truck chassis are specially engineered to come out fighting at the bell—year after year. They have the same *ruggedness* that has made International Trucks the heavy-duty sales leader for 21 straight years.

They are designed for *flexibility* and *maneuverability*. They have no equal for *dependability* and *ease of handling*. These chassis are specialized for *extra safety*.

Each of the eight engines in the International fire-fighting line gives *power to spare* for *sustained pumping operations* at full capacity. Pumping capacities range from 500 to 1,250 GPM.

International offers *seven* fire truck chassis for fire fighting equipment of all types and sizes. This balanced line ranges from the R-166 with a GVW rating of 16,000 lbs. to the L-306 with 30,000 lbs. GVW rating. There are transmissions, axle ratios, and wheelbases to meet every requirement.

Get all the facts about these specially-engineered International fire truck chassis from your nearest International Dealer or Branch.

INTERNATIONAL HARVESTER COMPANY • CHICAGO

International Harvester Builds McCormick Farm Equipment and Farmall Tractors... Motor Trucks... Industrial Power... Refrigerators and Freezers

Better roads mean a better America

INTERNATIONAL TRUCKS

"Standard of the Highway"

ust Right!

FOR COMPLETE SATISFACTION USE

ORLD AMOUS

INDIAN FIRE PUMPS

The first cost is the last cost. No upkeep expense. No chemicals to buy. Only clear water used. That's why so many fire departments are replacing soda acid and other types of extinguishers with INDIANS. Here's a typical comment from our files:

"We consider Indian Fire Pumps one of the most important pieces of equipment in our company. Just two days ago we saved a Dry Goods store and several other buildings with small water damage by using Indians. Indians play a large part in extinguishing many of our fires and we intend to get more in the near future."

J. S. Williams

SEND FOR NEW INDIAN FIRE PUMP CATALOG

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PACIFIC COAST BRANCHES:

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L. N. Curtis & Sons 426 W. Third Street South Salt Lake City, Utah

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Fleck Brothers, Limited 110 Alexander Street Vancouver, B. C., Canada

C. E. Hickey & Sons, Ltd. Hamilton, Canada

● The radio dispatching room where complaint slips are received from phone operators seconds later via an endless conveyor belt system.

LARGEST CITY IN TEXAS GOES G-E!

G-E 2-WAY RADIO co-ordinates entire Houston municipal system

● P. E. Franklin, left, above, Houston's Supt. of Communications, designed and installed the new system in conjunction with his associates and G-E engineers.

IN TEXAS everything is *Big* and that includes the recent problem of co-ordinating the Houston municipal radio system. Installation bids were called in from all major manufacturers of communications equipment. A solution to this complex problem *and* dependable, performance-tested units were prime requisites in awarding the contract.

Actually, three radio systems had to be set up—one for the Police Department, the Fire Department and the Water Department. The three frequencies to be used were separated by approximately a megacycle (two of the frequencies by *less* than a megacycle). City plans estimated one tower with three antennas and specified negligible desensitization to any one system when others were in use.

G-E engineers determined that a *single* high-gain antenna alone could give a completely omni-directional signal and thus do a better job. *Tests* of General Electric equipment *on two different occasions* proved that our units out-performed the exacting standards required for this installation. Today, G-E 2-way radio co-ordinates the entire Houston municipal system!

Good systems engineering has long been a part of the General Electric Communications Advisory Service. There's a CAS man in the G-E office near you—trained to answer your communications problem. Call him today!

General Electric Co., Section 5943, Electronics Park, Syracuse, N. Y.

● Telephone calls to the Police, Fire and Water Departments are handled by four operators in the master control room at headquarters.

● The new multi-million dollar Jail and Criminal Courts Building—headquarters for the municipal radio system. From this point, 360 G-E 2-way radio equipped vehicles in the three city departments are dispatched.

● From the ground up—the new single high-gain antenna, recommended and designed by G-E engineers. In operation only a short time, transmission messages have been reported as far as 175 airline miles from Houston!

You can put your confidence in—

GENERAL ELECTRIC

PROOF of the Year-After-Year Dependability of ADT Protection is Presented in These Remarkable Performance-Record Figures

Efficiency of ADT Central Station Protection Services in establishing a high degree of immunity against fire, burglary and other hazards is reflected in the accompanying performance record for 1952 and for the past ten years.

These figures present convincing evidence of the outstanding effectiveness of ADT Protection in minimizing losses and consequently giving greater assurance of uninterrupted business operations.

Such performance is made possible through round-the-clock supervision, regular inspections and tests and complete maintenance of ADT protective systems by specially trained personnel.

These vitally important factors are a standard part of ADT Service. They are the features which give ADT its all-important plus value in the protection of life and property.

Let us tell you how ADT Services can be applied to give better protection at lower cost.

SPRINKLER SUPERVISORY AND WATERFLOW ALARM SERVICE

Supervisory alarms, indicating temporary impairment of sprinkler systems	179,901
Waterflow alarms, caused by fires or serious leaks	3,044
Manual fire alarms	162
Insurable values of properties protected	$13,246,349,000
Ratio of losses to insurable values protected	2/100ths of 1%
Fire loss immunity in 1952	99 98/100 %

AVERAGE FIRE LOSS IMMUNITY DURING THE PAST TEN YEARS 99 97/100 %

WATCHMAN'S REPORTING AND MANUAL FIRE ALARM SERVICE

Investigations of failures of watchmen to signal Central Station on schedule	214,472
Total number of signals recorded	329,640,416
Watchmen's patrol efficiency	99 93/100ths %
Alarms from Manual Fire Alarm Boxes	1,390
Insurable values of properties protected	$18,641,990,000
Ratio of losses to insurable values protected	5/100ths of 1%
Fire loss immunity in 1952	99 95/100 %

AVERAGE FIRE LOSS IMMUNITY DURING THE PAST TEN YEARS 99 95/100 %

1952

BURGLAR AND HOLDUP ALARM SERVICES

Attacks on ADT Protection	2,144
Entrances effected	1,221
Captures as result of burglar, holdup and other emergency alarms	735
Insurable values of properties protected	$3,092,058,000*
Ratio of losses to insurable values protected	1/100th of 1%
Burglary loss immunity in 1952	99 99/100 %

AVERAGE BURGLARY LOSS IMMUNITY DURING THE PAST TEN YEARS 99 99/100 %

*Not including ADT-protected values in bank vaults, the U.S. Treasury, Federal Reserve Banks and branches, the U.S. Mints and the U.S. Bullion Depositories at Fort Knox, Ky., and West Point, N. Y.

ADT

Controlled Companies of
AMERICAN DISTRICT TELEGRAPH COMPANY
155 Sixth Avenue, New York 13, N. Y.
CENTRAL STATIONS IN PRINCIPAL CITIES

NEW McCULLOCH

CENTRIFUGAL FIRE PUMP

MODEL 7 FP

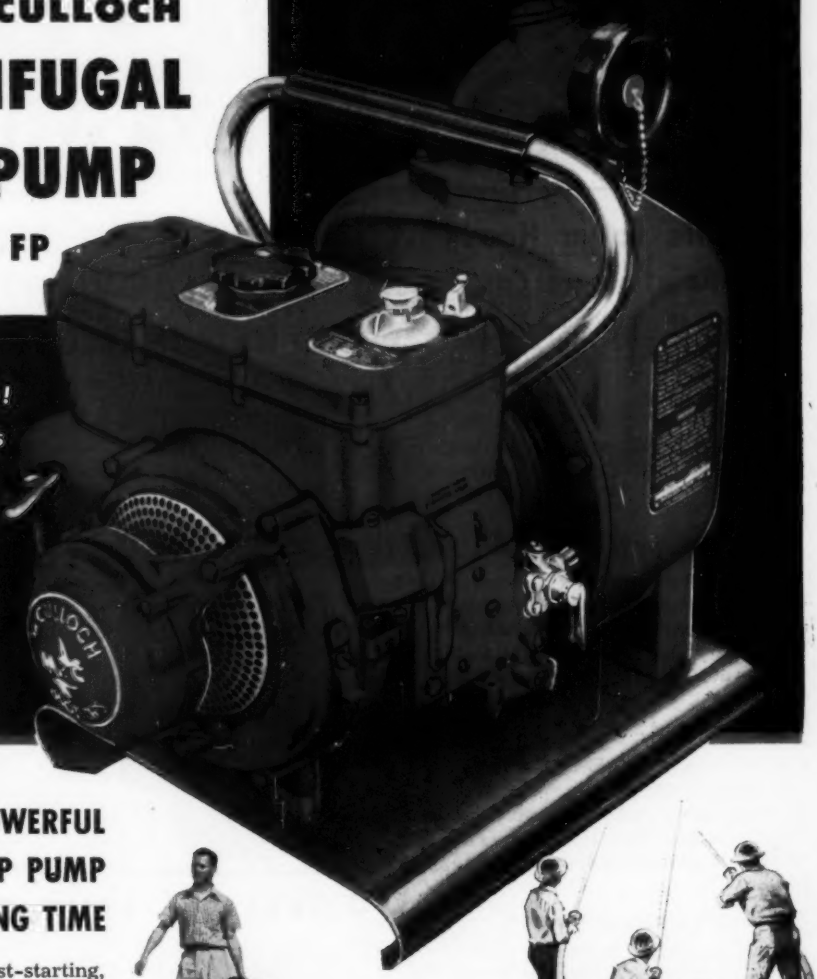
Weighs only 57 pounds complete!

Delivers 250 gallons per minute!

Develops pressures up to 100 psi!

Primes at 25 feet suction lift!

Delivers fog, stream, or foam!



LIGHT, POWERFUL McCULLOCH 7 FP PUMP CUTS FIRE-FIGHTING TIME

One man can carry this fast-starting, high-capacity fire pump. It's fast on the scene—and fast in action. Its features are unmatched by any other pump on the market.

Will operate three 1½-inch, 50-foot hoses with ⅜-inch tips, 55 pounds pressure in each line!

FEATURES

Special McCulloch 7-hp, 2-cycle engine • Special McCulloch self-priming centrifugal pump • Automatic-rewind cable starter; no ropes • Shielded against falling water • Hot spark for fast starting in any weather • Lubricated throughout by fuel mixture; no oil reservoirs, grease cups, or stuffing boxes • No bearings in pump; non-clogging type impeller mounted on engine shaft • Engine controls conveniently grouped in panel • Fuel tank built in; 3-way valve for auxiliary tank, if needed • Weighs 57 lb.; easy-carry handle at balance center.

PERFORMANCE CHART *(with 10-foot suction lift)*

Discharge Pressure PSI	10	20	30	40	50	60	70	80	90	100
Discharge Hd. Ft. Water	23	46	69	92	115	138	161	184	207	231
U. S. Gal. Per Minute	250	227	197	164	130	101	78	54	38	25

NATIONWIDE SALES AND SERVICE

5-1201

McCULLOCH

McCulloch Motors Corporation, Los Angeles 45, Calif.
Export Dept.: 301 Clay St., San Francisco 11, Calif., U.S.A.
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525 First Ave., Quebec, Quebec
224 N. George Street, Peterboro, Ontario

FOAM FACTS

Published quarterly in the interests of fire protection everywhere.

NATIONAL FOAM SYSTEM, INC.

WEST CHESTER, PENNA.

Portable Foam House Cuts Maintenance Costs, Allows Plant Expansion

A large Southern refinery was recently faced with the need of eliminating the excessive cost of maintaining its main line chemical foam piping system. Also, a more flexible system was wanted, to allow for future expansion.

Portable System Devised

To solve this problem, engineers of National Foam System designed and installed a completely portable "Foam House on Wheels," consisting of two trucks and a trailer. Each truck was equipped with an Aer-O-Foam Liquid Proportioning Pump, a 900-gallon tank for Aer-O-Foam Liquid 3% Regular, nozzles and hose. One truck was equipped with a water pump, the other designed so that a water pump could be added later if desired. The trailer housed a gasoline-driven pump and hose.

Costly Piping Eliminated

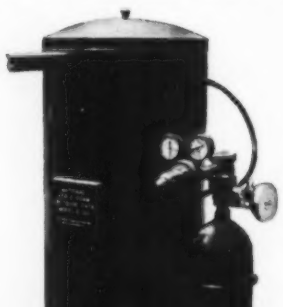
Foam house and main line piping were abandoned, and only the lateral piping to foam chambers was retained. All existing chemical foam chambers were converted with the new National MCV foam makers for use with mechanical Aer-O-Foam.

Complete Flexibility

When fire occurs, a truck or trailer is spotted at a point near a water hydrant, the hose is connected and, when water is flowing through the truck, the Aer-O-Foam Liquid Proportioner is adjusted to inject foam liquid at the proper rate. Two flow meters provide a continuous check on the accuracy of the water and Liquid input. When tanks are not equipped with chambers, foam towers are similarly used.

The result is better, more flexible protection, elimination of the costly piping system and foam house, and adaptability to the expansion plans of the refinery.

COMPLETE FOAM FIRE PROTECTION... NO WATER OR POWER SUPPLY NEEDED WITH NEW NATIONAL PRESSURE-PACK



For complete foam fire protection where neither water nor power is available, the new National Pressure-Pack is the ideal answer. Here is a completely self-contained, pressurized, mechanical foam unit, supplied in four standard sizes ranging from 33- to 200-gallon solution capacity. The largest unit can produce 2,000 gallons of fire-smothering Aer-O-Foam in less than three minutes.

The Pressure-Pack is designed for use with overhead spray deflectors, dip tank or drainboard deflectors, floor nozzles or portable nozzles. Installations may be either portable or fixed. Operating pressure is supplied by a nitrogen or air cylinder.

A control for local manual operation is provided. Other available controls include remote manual operation, completely automatic operation, or any combination of these controls. The unit is easy to install and maintain, can be tested at any time without using Aer-O-Foam Liquid, and can be recharged in a matter of minutes after use.

For all isolated hazards, or wherever water and power are not available, the Pressure-Pack supplies the same dependable Aer-O-Foam that is so widely used by the largest refineries and bulk plants. A complete descriptive folder is yours for the asking.

150 Years of Skill

Although National Foam System, Inc., marks the Silver Anniversary of its incorporation this year, its experience goes back almost 150 years, through the days when its predecessor, James Boyd & Bro., was later one of the largest manufacturers of motorized fire-fighting apparatus.

In the late 1920s, National Foam developed the first dual-line dry powder chemical foam system used in this country. In World War II, National helped to save innumerable lives and ships through its development of Aer-O-Foam, the mechanical foam known as "Navy Bean Soup." Again, National helped design equipment for loading jelly gasoline fire bombs.

Today National Foam System still serves the Armed Forces while it expands to meet the growing needs of industry. New products, improved designs, greater variety are combined in National Foam's largest and most versatile line of foam and foam equipment to be found anywhere.

Send for Your Free FOAM FACTS Subscription

FOAM FACTS, a quarterly magazine packed with interesting information on foam fire-fighting, will be mailed to you entirely free upon request. Just send your name and address to National Foam System, Inc., West Chester, Pa. There's no obligation, of course.

engineered FEATURES

INCREASE FIRE-FIGHTING EFFICIENCY

WITH MIDSHIP PUMP

WHEN you trade an older car and drive a new model, you realize the value of *new and better features!* It's the same with fire apparatus. That's why we're constantly engineering, perfecting and *proving* selected features that *add ever-greater efficiency* to your truck and service.

Here are top-ranking examples—Governor with Finger-Tip Control—No Adjustments Necessary . . . Ball-Type Discharge Valve with Remote Control Locking Handle . . . Rear Filler with Spring-Loaded Valve which doubles as Relief Valve to protect Booster Tank . . . Dual Reels with Electric Rewinds and Pressed Metal Wheels . . . Tank Float Water Level Gauge . . . Natural-Finished Oak Hose Bed Floor . . . Hose Bed Partitions . . . Special Rear Compartments.

You can choose the truck chassis you want . . . with famous Barton-American Midship or Front-Mounted Pumps . . . *plus* the unequalled Barton Super-Fog Gun! Yes . . . for engineered features that boost fire-fighting efficiency, look to American Fire Apparatus. Contact our nearest representative for *all* the details!

WITH FRONT MOUNTED PUMP

American
FIRE APPARATUS CO.
P. O. BOX 1024, MAIN ST. ROAD, BATTLE CREEK, MICH.

"Always Pioneering with Better Engineering!"

Detroit Fire Dept. Saves 20,000 Miles a Year...

with Motorola 2-Way Radio

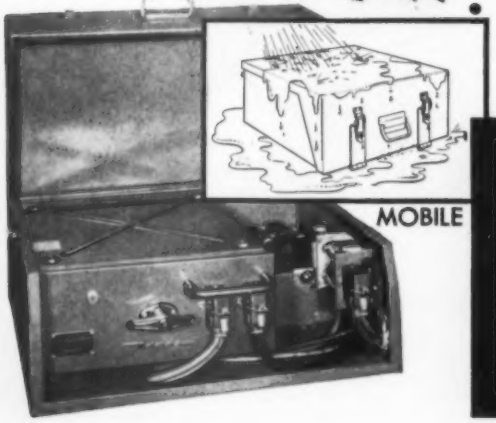
BASE STATION

The Detroit Fire Department's radio system includes three base stations in the center of the city—a 250-watt Central Office Unit, a 250-watt transmitter for standby and training purposes, and a 50-watt unit for standby purposes only. All are operated by remote control.

PORTABLE

The Handie-Talkie® radiophone goes anywhere a fireman can go. Lightweight, rugged, it provides instant contact with all other fire fighting units.

The Mobile Unit is constructed to give dependable communication under all conditions. It's ruggedly built . . . splashproof and weatherproof.



MOBILE

More than 75% of the nation's radio-equipped fire departments use Motorola to cut costs, coordinate action, improve service!

Here's *proof* of Motorola value! From actual mileage records of its 52 engine companies, 7 squads and 30 ladder companies, the Detroit Fire Department knows that it has saved at least 20,000 miles a year with Motorola 2-way radio! These significant savings are based in no small part on the dependable performance and operational value of Motorola equipment. The working superiority and quality engineering features of each Motorola unit produce over-all efficiency and economy. For example—the Sensicon "Permakay" filter saves fifteen nuisance tuning adjustments. Seven other exclusive Motorola features also add to Motorola economy and service. For full details, call your local Motorola engineer, or write Dept. 2-86-**FE**.

Motorola®
Communications & Electronics, Inc.
A SUBSIDIARY OF MOTOROLA INC.
900 N. Kilbourn Ave., Chicago 51, Illinois
Rogers Majestic Electronics Ltd., Toronto, Canada

McFARLAND "WETTER WATER" FIRE WAGON

Model 20-W. Fluid Capacity — 20 gals. Complete with ¾" by 25 ft. hose with nozzle, regulator, safety relief valve, vent valve and one (1) 2½ lb. carbon dioxide cylinder. Mounted on 10x2.50 ball bearing, rubber-tired wheels. Weight empty — 125 lbs. Overall height — 45".

McFARLAND (Model 20-W) "Wetter Water" FIRE WAGON is the first portable pressurized unit for "wetter water" fire fighting . . . and **the first such unit to bear the UL seal!**

Just rush the rubber-tired, "wetter water" Fire Wagon to the blaze; squeeze the handle of the carbon dioxide cylinder to instantly pressurize the tank of "wetter water" and you're ready to extinguish the fire. The unit is equipped with a high pressure hose and trigger type spray nozzle. The "wetter water" Fire Wagon throws a stream up to 40 ft. that will cover a 35 sq. ft. area. It's fast, effective, sure!

"Wetter Water" is ordinary water to which "Unox"*, a wetting agent, has been added. It puts out fires 3 to 4 times faster. **Speed** is the answer for fire **extinguishment** and **less damage.**

There's no better fire protection for plant, factory, warehouse, ranch — any isolated building — than McFarland's "wetter water" fire wagon.

*Unox — T.M. Union Carbide and Carbon Co.

Available in 7 standard models, 10, 20, 50 and 100 gal. capacity. Truck, trailer or skid mounted. Write for catalog.

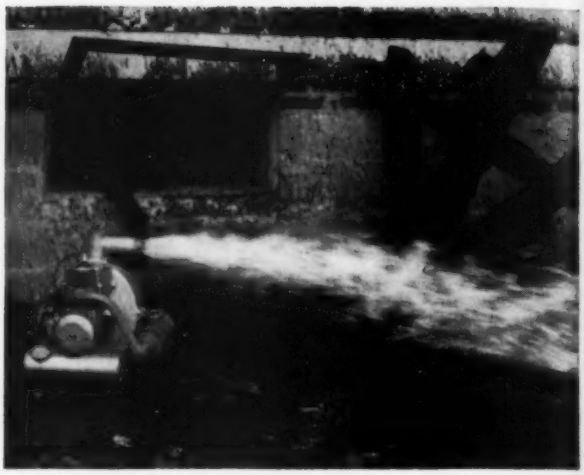
DEALER-DISTRIBUTOR FRANCHISES AVAILABLE
A real opportunity for a profitable sales connection. Fill in and mail this blank if interested.

McFarland Mfg. Corp.
1630 Roberts Street
Houston 3, Texas

I'm interested in a Franchise for your "Wetter Water" Fire Wagon.

NAME_____
ADDRESS_____
CITY_____ STATE_____
PRESENT BUSINESS_____

McFARLAND MANUFACTURING CORPORATION
1630 ROBERTS STREET PHONE FAirfax 7165 HOUSTON 3, TEXAS



How HOMELITE CARRYABLE PUMPS CAN WORK FOR YOUR DEPARTMENT

Whenever we demonstrate a Homelite Carryable Pump to fire departments, eyes begin to pop. Fire officials readily see that here is a lightweight, inexpensive pump that is mighty valuable equipment. And that goes for officials of all departments, large and small.

Large departments in metropolitan and urban areas like it for dewatering jobs. It's easy to use . . . doesn't tie-up large equipment . . . and pumps plenty fast, 15,000 gallons per hour.

Smaller departments in rural areas not only like it for dewatering, but also for feeding booster tanks, or for pumping water direct to fires from nearby ponds, wells, rivers, or streams.

Why not ask for a free demonstration? See a Homelite pump *in action*. See what it can do for you. Write to Homelite, today.

Manufacturers of Homelite Carryable Pumps • Generators Blowers • Chain Saws

Canadian Distributors: Terry Machinery Co., Ltd., Toronto, Montreal, Vancouver, Quebec.

PERFORMANCE · DEPENDABILITY · SERVICE

HOMELITE CORPORATION

304 RIVERDALE AVENUE • PORT CHESTER, N. Y.

UNIQUE CHEMOX TRAINING PROGRAM

helps St. Louis Fire Department cut CITY FIRE LOSSES IN HALF!

Station-house Chemox training results in greater efficiency at fire scene when conditions call for breathing protection.

No trouble keeping the "bull-session" going during Chemox training—Clear-tone Speaking Diaphragm in facepiece gives clear voice transmission.

Fireman feeds a fire—mask use during such daily routines helps make mask protection routine for "inside-out" fire fighting.

Chemox training doesn't stop at drill school for St. Louis firemen; it's carried right into the station-house.

Here, as you can see from the pictures, station chores are performed by firemen wearing Chemox masks. This extended training is one reason for the Department's success in fighting fires "from the inside out"—a technique advocated by Chief Kamman, along with intensive fire prevention and education, that has helped cut city fire losses in half during the last five years.

Here's how Battalion Chief Olsen sums up the value of firemen's confidence in breathing protection: "If smoke drives you back, the fire gets out of control. But when you can get into a burning building fast by wearing a mask, you can locate the fire quickly, put it out with a minimum of water and chemical."

M·S·A CHEMOX

The Chemox Mask is on in a matter of seconds; permits immediate entry and close-range fire fighting in unbreatheable or oxygen-deficient atmospheres with complete breathing safety because Chemox makes its own pure oxygen as the wearer breathes. Economical replaceable canister can be stored indefinitely. No high pressure cylinder lines or fittings. Write for Bulletin B-14.

MSA

SAFETY EQUIPMENT HEADQUARTERS

Call the M.S.A. man on your every safety problem . . . his job is to help you

MINE SAFETY APPLIANCES COMPANY

Braddock, Thomas and Meade Streets • Pittsburgh 8, Pa.

At Your Service: 76 Branch Offices in the United States

MINE SAFETY APPLIANCES CO. OF CANADA, LIMITED

Toronto, Montreal, Calgary, Winnipeg, Vancouver, New Glasgow, N.S.

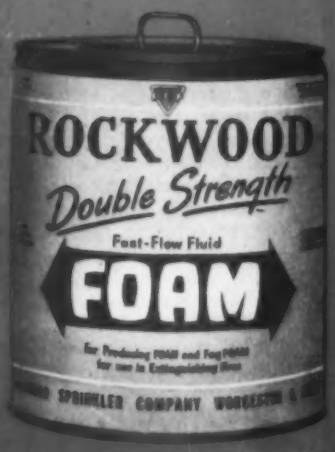
Representatives in Principal Cities in Mexico, Central and South America

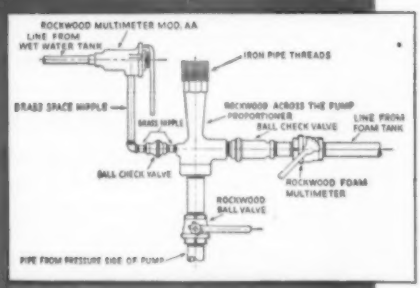
Cable Address "MINSAF" Pittsburgh

Cut Your Fire Losses

With This Tested

Rockwood Equipment





ROCKWOOD TYPE FFF FogFOAM NOZZLE WITH FogFOAM SCREEN puts out large fires in gasoline, benzol, and other highly volatile flammable liquids. Provides far greater extinguishing action than ever before possible with old-style chemical or mechanical foam equipment. Used in industrial plants, oil transport companies, refineries, airports, and municipal fire departments. Three sizes for service on 1½", 2½", and 3½" fire hose lines.

Nozzle provides three different discharges . . . FogFOAM with *screen* (shown), solid FOAM stream with *foam shaper* (not shown), and/or high-velocity WaterFOG by shutting off FOAM liquid. Through FogFOAM screen, 2½" size discharges 200 gpm @ 100 psi. Range: approximately 30 feet. Approved by Underwriters' Laboratories, Inc.

ROCKWOOD DOUBLE STRENGTH, FAST-FLOW FLUID FOAM LIQUID (3%) extinguishes large spill fires in gasoline with maximum speed and safety to firemen. More fluid, faster spreading. Mixed with 97 parts water, it forms excellent foam blanket that quickly re-seals if broken. Flows freely at sub-zero temperatures (−15°F). Clings to metal surfaces as an insulator. Will not cause corrosion and is easily washed off.

Used with fire hose line nozzles and permanently piped FogFOAM and FOAM installation. Comes in 5-gallon cans or 50-gallon drums.

Approved by Underwriters' Laboratories, Inc.

Regular Rockwood FOAM Liquid (6%) also available in 5-gallon cans or 50-gallon drums.

ROCKWOOD MODEL DUAL "B" AROUND-THE-PUMP PROPORTIONER automatically feeds FOAM liquid or wetting agent into hose lines. Eliminates waste, assures accurate mixing. Used when pressure is maintained by a pump from draft supply or booster tank. Operates in range from ¾" booster lines to 2½" hose lines.

Multimeter settings admit proper amounts of wetting agent for varying nozzle discharges and solution strengths — metering valve serves same purpose on FOAM side of eductor. Ball check valve prevents water from backing into FOAM liquid container.

Maximum nozzle discharge when using FOAM liquid: 200 gpm — when using 1% wetting agent solution: 100 gpm.

Custom-engineered proportioning systems for all mobile equipment are also available.

GET YOUR COPY of this informative, illustrated, 12-page booklet on Rockwood Fire Fighting Products. Write direct to Rockwood Sprinkler Company, 54 Harlow Street, Worcester 5, Massachusetts.

ROCKWOOD

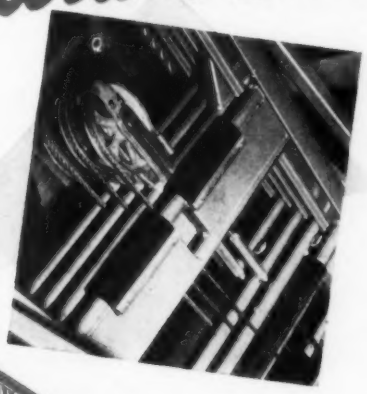
ROCKWOOD SPRINKLER CO.

Engineers Water...to cut fire losses

THERE'S *Extra Value* FOR YOU *in*

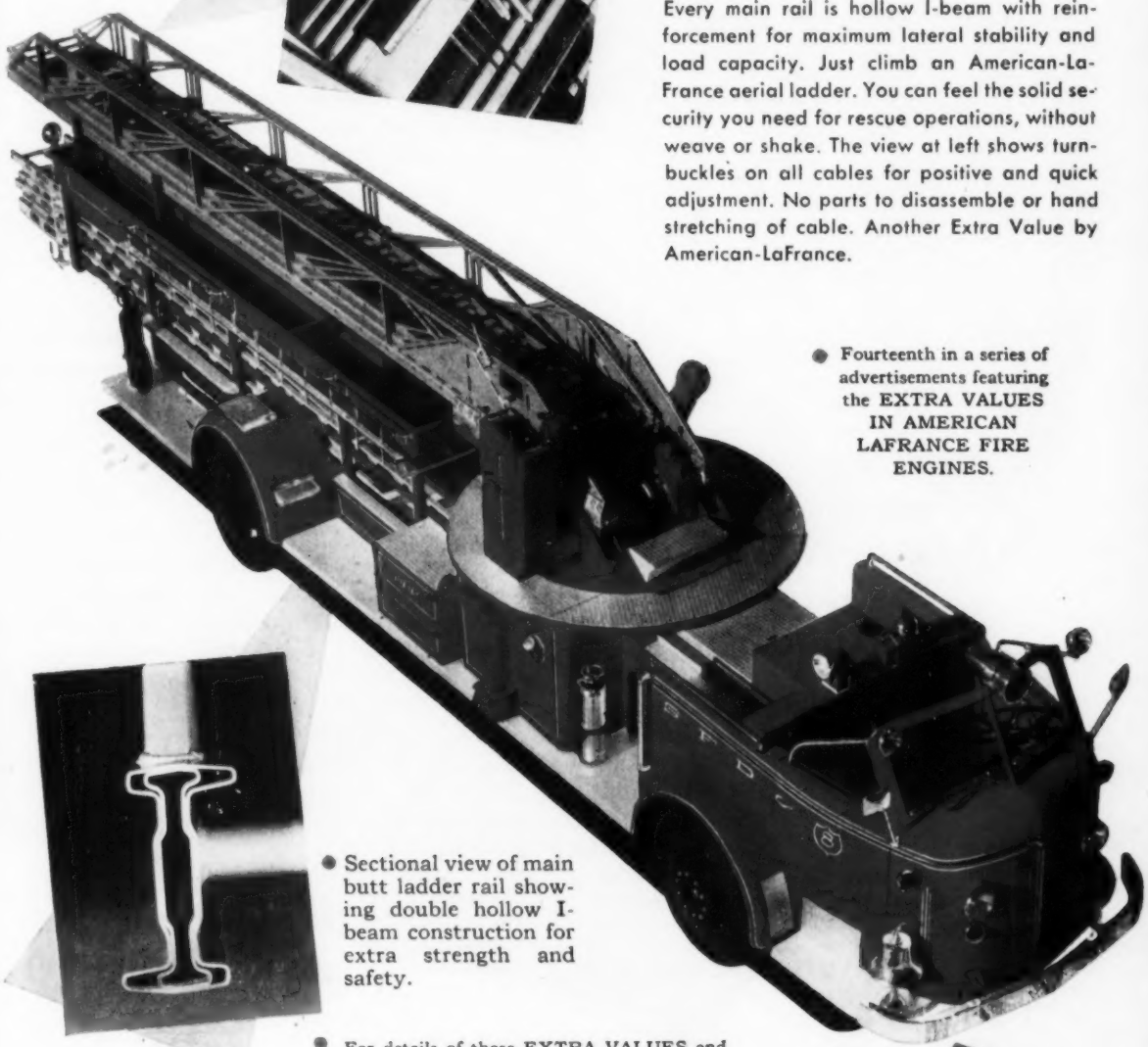
AMERICAN-LAFRANCE

AERIAL LADDERS



There is extra strength for greater utility and safety. Easier maintenance, too!

Every main rail is hollow I-beam with reinforcement for maximum lateral stability and load capacity. Just climb an American-LaFrance aerial ladder. You can feel the solid security you need for rescue operations, without weave or shake. The view at left shows turnbuckles on all cables for positive and quick adjustment. No parts to disassemble or hand stretching of cable. Another Extra Value by American-LaFrance.



● Fourteenth in a series of advertisements featuring the EXTRA VALUES IN AMERICAN LAFRANCE FIRE ENGINES.

● Sectional view of main butt ladder rail showing double hollow I-beam construction for extra strength and safety.

● For details of these EXTRA VALUES and MANY MORE, write for illustrated booklet.

AMERICAN-LAFRANCE-FOAMITE CORPORATION

ELMIRA, NEW YORK, U. S. A.

LAFRANCE FIRE ENGINE AND FOAMITE LIMITED

TORONTO 9, ONTARIO, CANADA

TO PLAY SAFE IN EMERGENCY RESCUE WORK

Insist on Resuscitation Equipment that . . .

1 **WILL LET YOU TREAT ANY PATIENT —ADULT, CHILD OR INFANT—WITH EQUAL EFFICIENCY AND SAFETY**

You never have to worry about proper pressure settings with the E & J. They are factory-set at both positive and negative limits that have been *confirmed as absolutely safe for any patient*, even premature infants, by extensive studies in great medical centers and by hundreds of thousands of actual applications during more than twenty-three years of use.

The E & J always operates at full efficiency; never at reduced pressures in which respiratory efficiency decreases rapidly.

2 **PROVIDES COMPLETELY AUTOMATIC AND MECHANICAL *EXHALATION* AS WELL AS INHALATION**

The positive *and negative* pressures of the E & J enable you to provide steady, rhythmical inhalation and exhalation *without reliance on the elastic recoil of the patient's lungs*, which may be adversely affected by injury, complication or decrease in general body tone as a result of critical asphyxia. The E & J does the whole job, not just half.

The E & J AUTOMATIC RESUSCITATOR - ASPIRATOR - INHALATOR

These are just two of the many reasons why E & J Resuscitators have been selected for use in a large majority of the leading hospitals of the world and by the outstanding rescue squads of fire and police departments, industrial plants, mines and First Aid services. Get *all* the information, *all the medical facts*, NOW by writing to:

ACCEPTED COUNCIL ON PHYSICAL MEDICINE and REHABILITATION AMERICAN MEDICAL ASSOCIATION

E & J is always glad to demonstrate!

E&J

E & J MANUFACTURING CO.
Burbank, Calif.

Here's Modern Design

to meet Modern Conditions

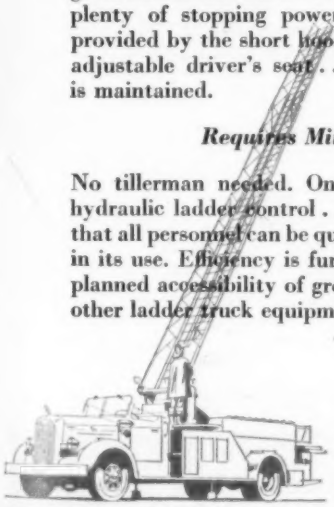
Traffic-filled streets, limited manpower and greatly increased hazards are problems facing many fire officials today. The modern Mack aerial ladder apparatus has been expressly planned to meet these modern conditions.

Tops in Traffic...

Compact four-wheel chassis best adapted to modern traffic conditions . . . and to existing quarters, too. Famous Mack "707" Thermodyne engine gives fast acceleration . . . powerful brakes assure plenty of stopping power. Maximum vision is provided by the short hood, large glass areas and adjustable driver's seat . . . yet personnel safety is maintained.

Requires Minimum Manpower...

No tillerman needed. One-man, jam-proof, all-hydraulic ladder control . . . so simple to operate that all personnel can be quickly and easily trained in its use. Efficiency is further increased through planned accessibility of ground ladders, tools and other ladder truck equipment.



Versatile for Varied Jobs...

Strong, all-steel ladder has high safety factor for upper-story rescue or ladder nozzle work . . . and even when extended full-length horizontally. Fast, flexible ladder performance increases range of operations. Aerial ladders available in 85, 75, and 65 foot lengths. Apparatus can also be built with special-duty equipment—such as booster, foam, or wet water applications. Or, with the addition of hose compartment and major pump, it becomes a quintuple combination—the "one apparatus fire department."

Moreover, every Mack aerial is built with all the stamina and dependability for which Mack apparatus have long been famous. For complete details, call in your Mack representative or write for descriptive booklet.

Illustrated above:

Mack Type 85, 85 ft. aerial ladder truck recently delivered to West Springfield, Mass.

modernize with

Mack
FIRE APPARATUS

1670

MACK MANUFACTURING CORPORATION
Fire Apparatus Division
Allentown, Pa.

Factory branches and dealers in all principal cities for service and parts. In Canada: Mack Trucks of Canada, Ltd.

TRIPLE COMBINATION PUMPERS—500 TO 1250 GPM . . . SQUAD AND HOSE WAGONS . . . 65', 75', AND 85' AERIALS . . . COMBINATION LADDER TRUCKS

for RUGGED DUTY !

MIDWESTERN PROTECTIVE CLOTHING

The overwhelming preference for Midwestern Protective Clothing is the result of outstanding performance when the going is tough and the chips are down. The superior quality, design, fabric texture and many exclusive features found in Mackinaw Coats and other Midwestern garments help increase your department's efficiency and provide extra protection for your men at the scene of the blaze. There is no substitute for the expert workmanship, built-in comfort and longer wear you get by specifying Midwestern.

PROTECTION—COMFORT—SERVICE

You will find the type of fabric exactly suited to your needs in our wide selection of rubber materials. You can absolutely depend on the softness and flexibility of these high grade materials to meet your most exacting requirements for lasting comfort, rugged service and greater efficiency on the job.

For complete information on our full line of firemen's protective clothing, see your Midwestern dealer. A letter to the factory will also bring you literature and material samples for your inspection.

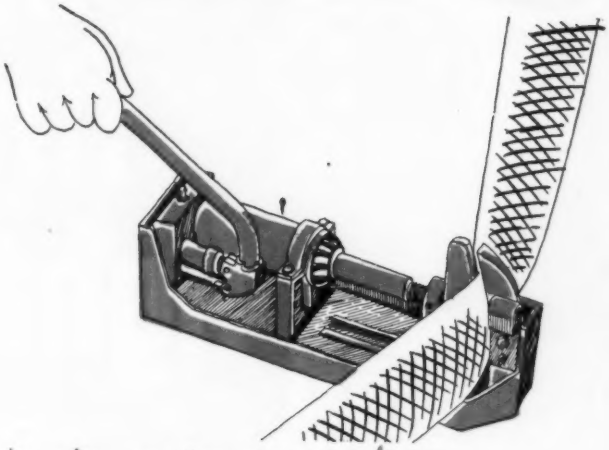
NONE GENUINE WITHOUT THIS TRADE MARK

MIDWESTERN MFG. CO., Mackinaw, Illinois

Manufacturers of the Famous **MACKINAW Coats**

Try this amazing, new-

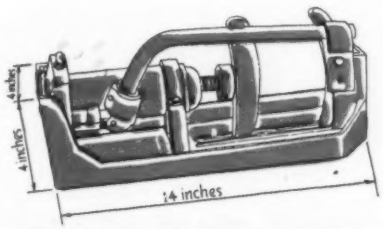
HYDRA-CLAMP



THE STRONGEST, SAFEST
EASIEST HOSE CLAMP
EVER DEVISED

TRY IT ONCE—
YOU'LL NEVER USE
ANY OTHER CLAMP

Works at a touch—won't slip on ice or on slope



STOWS COMPACTLY

Weighs 22 pounds and measures only 4" x 4" x 14". Easily fits into compartment or can be carried in officer's car.

DEALERS . . . . . .

Naturally, there will be a big demand for this latest aid to modern fire fighting. You should get all the data NOW, to answer inquiries. Send for folders and prices. They're yours for the asking.

YOU have appreciated and made use of "Fog" and "Wet Water". Here is another vital improvement in the art of fire fighting. The **HYDRA-CLAMP** can be worked safely and surely—even by a child. It operates on oil—just like your car brakes. It shuts off completely any flow up to 250 psi in fire hose up to and including **3".** At the turn of the handle it "bleeds" the cylinder so that partial or full flows can be used. It sets firmly on ice, sand or slope. It can't kick back and injure operator and it **WON'T** injure hose in any way. It's the safest and simplest hose clamp ever made.

THE **HYDRA-CLAMP** requires minimum attention—it being necessary to refill or check oil cylinder on occasion. It's always ready—always effective.

WHEN you make up specs. for **NEW** apparatus—always **INCLUDE** the **HYDRA-CLAMP.** When you see and use it—you'll never use anything else!

• **Write for folder and prices. Do it now!**

THE HYDRA-CLAMP COMPANY
291 Bartlett Street
Manchester, New Hampshire

WARD LA FRANCE

PIRSCH
EST. 1857

first in fire fighting

OREN

CENTRAL
ST. LOUIS, MO.

AHRENS-FOX

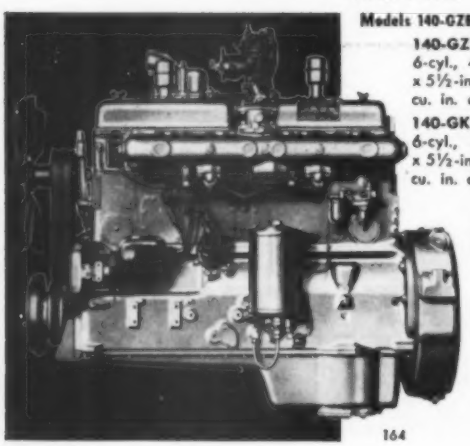
FWD

THE GENERAL FIRE TRUCK CORP.

WAUKESHA ENGINES

WAUKESHA MOTOR COMPANY • WAUKESHA, WISCONSIN

NEW YORK TULSA LOS ANGELES



164

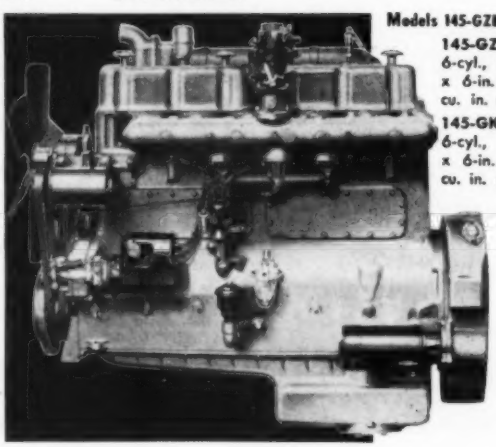
Models 140-GZB and 140-GKB

140-GZB — 200 hp, 6-cyl., 4⅜-in. bore x 5½-in. stroke, 554 cu. in. displacement.

140-GKB — 190 hp, 6-cyl., 4½-in. bore x 5½-in. stroke, 525 cu. in. displacement.

•

Send for Bulletin 1584



Models 145-GZB and 145-GKB

145-GZB — 250 hp, 6-cyl., 5⅜-in. bore x 6-in. stroke, 817 cu. in. displacement.

145-GKB — 240 hp, 6-cyl., 5¼-in. bore x 6-in. stroke, 779 cu. in. displacement.

•

Send for Bulletin 1594

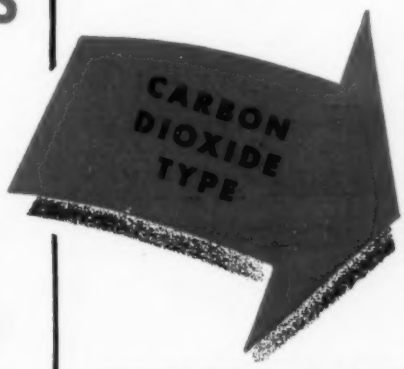
TRADE MARK

C-O-TWO

REG. U.S. PAT. OFF.

FIRE EXTINGUISHERS *give fast, positive fire protection*

● Top quality backed by experienced engineering results in operating superiority at all times with the world famous C-O-TWO Squeez-Grip Carbon Dioxide Type Fire Extinguishers as well as the newer C-O-TWO Dry Chemical Type Fire Extinguishers. Furthermore, modern manufacturing facilities and extensive field testing, together with approvals such as the Underwriters' Laboratories, Inc., Factory Mutual Laboratories and Government Bureaus assure you of fast, positive action the instant fire strikes.



With C-O-TWO Squeez-Grip Carbon Dioxide Type Fire Extinguishers the penetrating carbon dioxide is a clean, dry, non-damaging, non-conducting inert gas . . . smothers fire in seconds, leaves no after fire mess . . . highly effective on flammable liquid and electrical fires, as well as some surface fires involving ordinary combustible materials. The C-O-TWO Squeez-Grip Valve is the greatest single contribution to the releasing of carbon dioxide for first aid fire fighting . . . just squeeze lever to open . . . release to close.

Convenient 2½, 5, 10, 15 and 20 pound hand sizes . . . discharge horn non-conducting, shatterproof construction. Also, convenient 50, 75 and 100 pound wheeled sizes . . . available with sturdy, wide-faced wheels either with or without rubber tires, as well as available with or without discharge hose and horn protection cover.

With C-O-TWO Dry Chemical Type Fire Extinguishers the heat-shielding dry chemical is a non-conducting, non-abrasive, non-toxic, finely pulverized powder compound . . . blankets fire instantly . . . exceedingly effective on flammable liquid, gas and electrical fires, as well as surface fires involving ordinary combustible materials. The exclusive inverting design renders constant free flowing dry chemical, assuring faster, more effective and complete discharge.

Convenient 4, 20 and 30 pound hand sizes . . . no syphon tubes or valves within the cylinder to become clogged or inoperative . . . discharge hose and squeeze type discharge nozzle remain empty until actuation takes place . . . one piece removable top assembly. Also, convenient 150 pound wheeled size . . . sturdy, wide-faced wheels . . . discharge hose and two position discharge nozzle having soft or solid stream fully enclosed in protection casing . . . footrail and dual bar handle provide easy inverting.

Act now for complete free information on these fast, positive fire extinguishers. Remember fire doesn't wait . . . get the facts today!

C-O-TWO

MANUFACTURERS OF APPROVED FIRE PROTECTION EQUIPMENT

Squeez-Grip Carbon Dioxide Type Fire Extinguishers
Dry Chemical Type Fire Extinguishers
Built-In High Pressure and Low Pressure Carbon Dioxide Type Fire Extinguishing Systems
Built-In Smoke and Heat Fire Detecting Systems

C-O-TWO FIRE EQUIPMENT COMPANY

NEWARK 1 • NEW JERSEY

C-O-TWO FIRE EQUIPMENT OF CANADA, LTD. • TORONTO 8 • ONTARIO

Sales and Service in the Principal Cities of United States and Canada

AFFILIATED WITH PYRENE MANUFACTURING COMPANY

FOR GREATER SAFETY

the powerful Seagrave V-12 engine is in the correct position in front of the cab where it protects the driver and crew from harm in case of collision.

The Seagrave V-12 is the greatest engine ever built exclusively for fire service.

FOR GREATER SAFETY

the all-bronze Seagrave Centrifugal Pump sets deep in the frame, thereby providing a lower center of gravity and better balance of truck.

This location also means there is extra room in the body of the truck for hose and equipment.

FOR GREATER SAFETY

- Seagrave Power Brakes
- Seagrave Heavy Duty Frames
- Seagrave All-Steel Bodies
- Seagrave Improved Steering

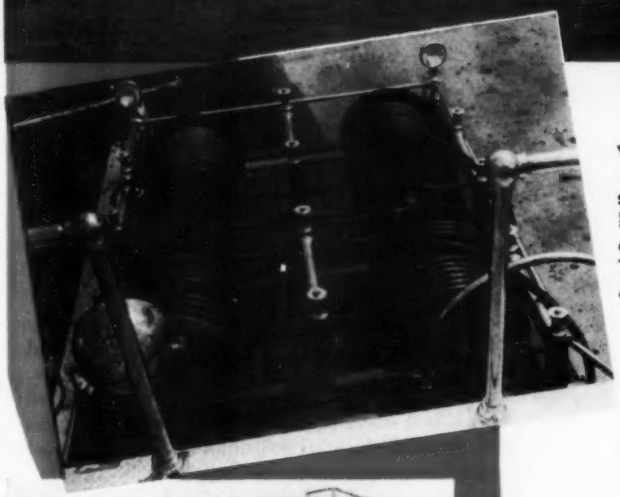
THE SEAGRAVE CORPORATION
Columbus, Ohio
Bickle-Seagrave, Lt'd.,
Woodstock, Ont.

Seagrave

THE GREATEST NAME IN FIRE APPARATUS

In Military as well as Civilian Service HANNAY HOSE REELS are FIRST in Dependability!

Photos show U.S. Coast Guard's Howe Crash Truck, equipped with FOUR Hannay Hose Reels with Explosion-Proof Electric Motors.



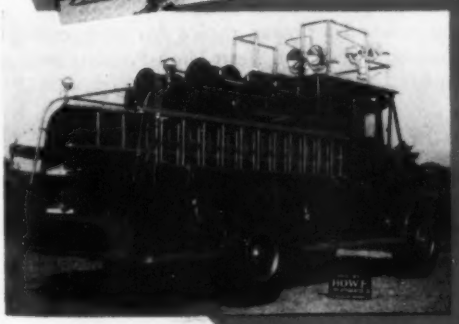
You can't buy a better hose reel than a HANNAY! Designed and built by firemen for firemen, Hannay Hose Reels are functionally correct in every detail of construction and service . . . *completely dependable in any emergency.* That is why those who know . . . civilian fire officials and military purchasing agents . . . insist on HANNAY!

Check these superior advantages of

HANNAY ELECTRIC DRIVE HOSE REELS

- Explosion-proof heavy duty motor, protected against fog, foam, fumes and water
- Sealed push button control; no gears to shift, no clutch to engage
- Water and Vapor Resistant
- Extra heavy; built to withstand high pressures
- Safe rewind speed; always under control

When YOU need dependable hose reels, either for standard or special performance, specify HANNAY . . . built to do a better job, in fire fighting, in industry, in national defense!



Crash Truck built by Howe Fire Apparatus Co., Anderson, Indiana

. . . LOOK FOR THIS

HANNAY
REG. U.S. PAT. OFF.
HOSE REELS
CLIFFORD B. HANNAY & SON, INC.
WESTERLO, NEW YORK

© 1953, C.B.H. & S., Inc.

MANUFACTURERS OF MANUAL AND POWER OPERATED HOSE REELS FOR EVERY PURPOSE

"a very careful survey of fire equipment"

led Bell Aircraft Corporation to select

JOHN BEAN *high-pressure fog* FIRE-FIGHTER

Fast acting, on-the-spot methods of fire control are essential to the Bell Aircraft Corporation in Buffalo, New York. Equipment is needed that can run the gauntlet from airport crash calls to regular industrial fires. Inadequate equipment or equipment failure could prove disastrous in both lives and property. Bell had to be certain they were right when they selected their fire-fighting unit.

Here's an excerpt from a letter by Fire Chief Robert M. Stowell, "I conducted a very careful survey of fire equipment for combined use for airport, test cells, and industrial needs. It was decided that at least 800 lbs. pressure at the pump was needed to produce an effective fog to handle two nozzles. . . . We have used our John Bean High-Pressure truck several times and it has proven that we made the proper choice of equipment."

Be sure you make the proper choice for your community — investigate the John Bean High-Pressure Fog Fire-Fighter today.

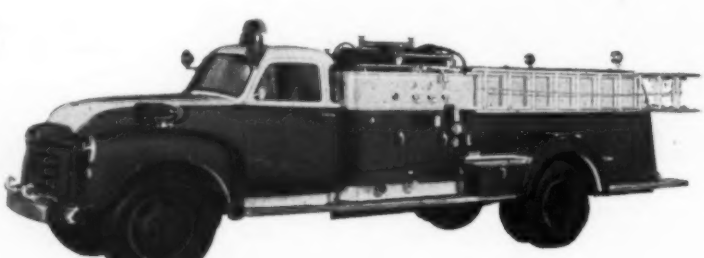
JOHN fmc BEAN

ORIGINAL HIGH-PRESSURE FOG FIRE-FIGHTER

Can be mounted on most standard truck chassis

John Bean Division
Dept. 126
Lansing 4, Michigan

John Bean Division
P. O. Box 145
San Jose, California



A PRODUCT OF FOOD MACHINERY AND CHEMICAL CORPORATION

Here's performance you can count on

RCA 2-WAY RADIO

Straight-Forward Circuits to bring your message in without interference—even when you're operating close to an adjacent-channel transmitter.

Automatic Modulation Control to lower loud voices, raise weak voices, to correct level, without distortion.

Long Tube Life for dependable, low-maintenance service. Half the tubes operate at 1/5 maximum ratings.

Full Frequency Range: Fleetfone 30-50 mc, Carfone 152-174 mc.

Fits Anywhere: Transmitter-receiver unit takes no more space than a spare tire, mounts in any position, operates at low drain on 6- or 12-volt battery.

Stable Performance for minimum distortion. Ovenless crystals stay on frequency without warm-up, without wasting stand-by power.

Single-Case Construction for easy tuning and servicing. Offers plenty of protection—makes chassis and all components instantly accessible.

For Extra Dependability, installation and service facilities of the RCA Service Company are available.

* * *

For Complete Details on RCA 2-Way Radio contact the Communications Specialist at your nearest RCA Office or MAIL COUPON NOW.

RADIO CORPORATION of AMERICA
MOBILE COMMUNICATIONS
CAMDEN, N.J.

Radio Corporation of America
Communications Division
Dept. 50P, Building 15-7
Camden, N. J.

Please send me information on RCA 2-Way Radio
☐ Carfone ☐ Fleetfone
☐ Have RCA Representative call

Name_____

Address_____

Company_____

City_____ State_____ Zone____

For the smaller community—
POSITIVE, INSTANT CONTACT with the

FIRE CHIEF

FIRE DEPARTMENT

VOLUNTEERS

RESCUE SERVICE

RESCUE SERVICE

Provide your community—your property owners and your children — with all of the advantages of a big city fire alarm system.

At a cost well within reason, you can have a municipal fire alarm box system that will immediately announce the *location* of a fire.

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APRIL, 1953

FIRE ENGINEERING

VOL. 106, NO. 4

With the Editor

Lurking Disaster Not so many months ago the man who represents the fire service on the Civil Defense Commission in one of our foremost States had occasion to direct a civil defense test in a city of his state.

Discussing the local fire problems with the chief of that city's fire department, the state representative was told there existed a serious fire and explosion hazard in a certain plant within the municipality.

Partly out of curiosity and partly as a precautionary measure, the state official and the local chief visited the industrial plant in question and were appalled to find, upon checking further, that whereas the regulations called for a very limited storage of the particular hazardous chemicals which were worrying local fire officers (in this case chlorate of potash), actually the plant had in storage over 100 times that limit, enough in fact, to practically wipe out the city if the chemical were involved in an explosion.

The situation started a chain of thought in the state representative's head. He wondered how many more similar hazards might exist elsewhere in his state and he decided to try to find out. The initial result was so alarming that a more thorough study was authorized by the State, beginning with the Civil Defense "target areas." This investigation was made by a prober, unconnected either with the fire service or any branch of the state government, but under direction of state Civil Defense heads.

From the start the researcher was up against it. He was forced in most cases to accept the word of the plant or institution being surveyed, concerning the kind and amount of hazardous materials on the premises and from the beginning he found the information given him to be inaccurate and misleading. He got nowhere until he went beyond those plants and institutions to the *sources of supply*, the producers and distributors of the material, who had sold and delivered it to the industrial users. Then the facts began to take shape.

When all the data were placed before the heads of the state Civil Defense and safety authorities, there was considerable apprehension. In many cases not only were the well-planned fire defenses of the critical areas jeopardized, but disaster and death lay in wait for the fire fighters who would be called upon to combat the potentially serious fires or explosions in the respective occupancies. In short, what happened in Texas City, when almost an entire volunteer fire department was blown off the map, and the more recent occurrence when some 46 firemen fighting a lumber yard and warehouse blaze in Valparaiso, Chile, were killed and many others injured by an unexpected explosion, could very conceivably happen in not one, but a number of places in this particular state. Furthermore, under certain circumstances, the lives of entire segments of population in sectors in and near these locations bid fair to be jeopardized and this not by an enemy atomic bomb, but by management carelessness and just plain disregard for the commonest of commonsense safety measures. In not a few cases the hazardous situations uncovered were an open invitation to sabotage.

It is too bad that the complete story of what this state found out, and the measures it is taking to circumvent lurking disaster, cannot be told. Unfortunately the detailed story will have to wait. The problem is too much of a "hot potato" to receive wide publicity. It can be said, however, that this particular state has, as a result of these findings, engaged a top-notch research engineer who, with fact-finding assistants, collaborating with local fire officials and others concerned with fire defenses, has been given the green light to push investigations still further and come up with some remedial measures, after which there will be action, beginning at the top echelon.

One cannot help wondering after hearing about all this just how far-reaching this situation may be! Certainly it behooves fire officials everywhere, and particularly within the nation's "target areas," to intensify their own surveys and fact-finding, and if necessary to go "upstairs" to their state or even the Federal level, in order to find and remove these lurking potential disasters.

Fred Shepard

A "Big Little" Fire Department Sets The Pace in Effectiveness

With Fire Departments Like This, There is Inspiration for the Nation's Fire Service

A SPECIAL REPORT

Editor's note: **Considered by many to be the outstanding paper delivered at the Fire Department Instructors Conference in Memphis last February, was that of Fire Chief Chas. Reveley, detailing the fall and rise of the Stephens, Ark., Fire Department. Because there is encouragement, and a challenge in this report for every volunteer fire department of this country, FIRE ENGINEERING is happy to have the privilege of presenting Chief Reveley's paper, with some slight editorial revisions. Appreciation is expressed to Chief Reveley, to Hank Ritgerod, FDIC's publicity director, and to the inimitable Dick Vernor, FDIC Director, who made it all possible.**

Photo courtesy Stephens Vol. F. D.

Stephens volunteers fight Cotton Belt train wreck fire. Firemen worked in shifts to hold losses to minimum when fire involved stacked-up freight cars. Note fire stream coming from left.

THE Stephens Fire Department was organized in 1936 with a complement of twelve men and a chief. The town at that time had a population of 980 residents. The fire equipment at the time of organization consisted of a 1932 ½-ton Ford pick-up with a homemade body carrying 1,000 feet of 2½" hose; two 2½-gallon foam extinguishers, 2 straight playpipe nozzles, and a second-hand 35-foot painters' extension ladder. Department personnel changed quite often during that time, but the status of the department's ability as a fire-fighting organization remained about the same. All of the fires at that time were fought with hydrant lines, main strength and awkwardness. In 1946 the chief resigned, and leaving only seven firemen on the roster, which left the little community in the position of having practically no fire defenses. The City Fathers, awakened to this fact, drafted Charles T. Reveley to serve as chief and gave him the task of reorganizing the department, and pledged their support to do everything within their power to build up fire defenses.

In order to secure the necessary money, which had to be raised by means of a bond issue, for buying a piece of fire apparatus and building a station, it was first necessary to change the status of the town of Stephens from that of an incorporated Town to a City of the second class. After much hard work this was finally accomplished, and a bond issue (only $8,000.00) was voted with which to pay for the apparatus and help build a fire station. By dint of lots of work, and with very little money, there was built a modern brick fire station, fully equipped with hose rack, battery charger, cooking and eating facilities, and all required equipment. On October 1, 1948, the department received delivery of its long-looked-for new apparatus. This was an American-LaFrance 500-gallon pumper on a Ford chassis. This truck was fully equipped with 150 gallon booster tank, a full complement of hose, both 2½" and 1½", and ladders and extinguishers. With further effort, this was completely equipped with all-purpose nozzles, small tools and some special tools.

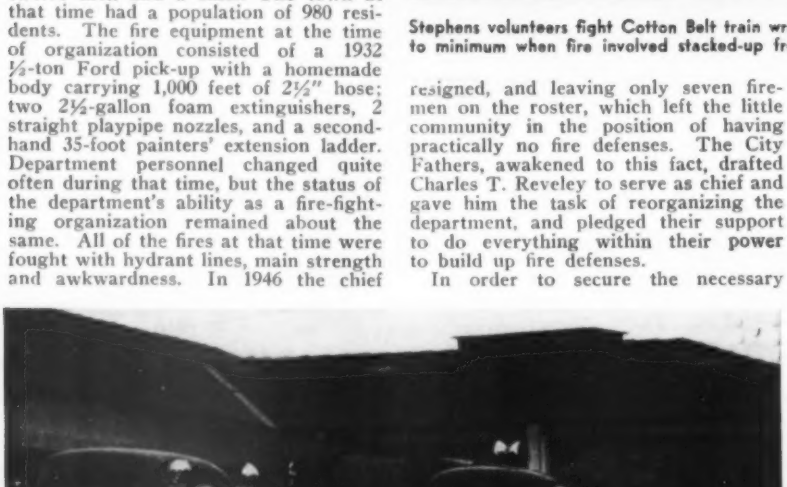


Photo Courtesy Chief Reveley

Members of the Stephens Fire Department. Left to right are Firemen Lester, Smart, Cromwell, Davis, Key, Alspaugh, Captains Ritchey and Jenkins, Assistant Chiefs Hare and Barkheimer. Bottom row, left to right, are Juniors Webb and Linkous, Chief Reveley, Fireman Stephenson, Dr. Hearnsberger, Firemen Pruitt, Cramer and Wilson.

At this time the department reorganized its personnel, bringing the total strength up to sixteen men and a chief. Upon the recommendations of the Arkansas Rating and Inspection Bureau, the Arkansas State Fire Instructor was called on to take over the job of starting personnel training program as set up by the Arkansas Fire College. This called for two drill nights each month, but the men voted to set aside each Monday night for drill night, when they would study and practice on the ten courses, which called for a minimum of 30 hours per course. It was very quickly realized

Photo courtesy Arkansas Gazette

Chief Reveley and his volunteer firemen pause in their around-the-clock forest fire fighting to enjoy brief snack of "coffee-and—" delivered to them on the forest fire line by the Ladies' Auxiliary of the Stephens Fire Department. Chief Reveley is third from the left.

that to accomplish successful training two things would have to be done:

Training Paramount

1. First, there must be real discipline or the organization would not last long as a volunteer department. Members of the department, believing in the principles of real democracy, discussed this phase very carefully and resolved that it was a case of discipline or no department. It was agreed that all rules and regulations would be submitted by the Chief Officers, and voted on by the department as a whole. A majority vote made them the order, and the minority would abide by them the same as would the majority.

It was agreed that there would be a fine for being late to drill and a heavier fine for being absent, with no excuses, not even sickness. There would be Kangaroo Court three times a year. Any member missing four consecutive meetings without a legitimate reason, or any member refusing to pay his fines, would be automatically dropped from the department. It was also agreed that all orders issued by officers during drill or a fire would be obeyed without question, but after return to the fire station any question could be brought up, discussed and ironed out.

If an officer had made an error and issued the wrong order, this method would help discourage making the same mistake twice. It was also made an order of business that after each fire, after all hands had returned to the station, on the request of any member there would be a discussion period, at which could be reviewed all aspects of the fire. In this manner while event was fresh in the firemen's minds, any mistakes could be analyzed, and it might be decided how and where men could have done a better job.

This plan serves to a very good advantage in keeping the captains, assistants and even the chief on their toes. It sometimes even resulted in charges being preferred before the Kangaroo Court. This tends to keep departmental discipline at a high level, adds a certain zest and fun to the operating of the department; and according to Chief Reveley, it increased the efficiency of the department.

Second, it was decided fire fighters would have trained and qualified instructors within their own department. Accordingly, two men were sent in February of 1949 to Little Rock to the State Instructors School for the proper training and schooling to qualify them to take over the instructing of the Stephens firemen. The instructors are required to attend the State Instructors school each year.

Through the efforts of a local insurance agency and the co-operation of the Arkansas Fire Prevention Association, the department and the Stephens Lions Club sponsored a Town Inspection Day for Stephens on February 23 and 24, 1949. Each man in the department worked with the association members in making the inspections. Fire officials consider this one of the smartest moves ever made, as it resulted in eliminating hundreds of hazards in business buildings. The ultimate result was that after the men in the department finished their Inspection Course they again made an inspection of every business house and found that all the hazards had been eliminated with the exception of approximately 25. Now the department receives requests regularly from home owners to check and inspect their residences for fire hazards. Stephens firemen believe this work properly becomes the duty of the well organized and efficient fire department because it results in fewer alarms. Officers of the Stephens Fire Department maintain that a small city should have regular inspections just the same as the larger cities.

Mutual Aid Pacts

After the department had received delivery of its new equipment and had done considerable training, the members began to think of a debt of gratitude they owed the neighboring cities of Camden and Magnolia, whose fire forces came to the aid of Stephens magnificently, when the latter lost several business buildings, in 1942. Up to this time there had been no way for Stephens volunteers to repay this service, but now vamps felt that they could. So they approached both city governments on the forming of a mutual aid pact between Camden, Magnolia, and Stephens. This was approved and signed in 1949. Now the arrangement has grown until the pact has the following members: Camden, Schumacker Naval Ordnance, Smackover, El Dorado, Magnolia and Stephens. Since the signing of this pact, Stephens has gone to the assistance of Camden in fighting a large consolidated school fire just outside the city limits of Camden, to Magnolia to assist several times in large fires in their business section, and even to Smackover to assist its hard-pressed firemen. The latter also assisted the Stephens department at a refinery fire.

After studying and practicing with actual problems one night each week for two years on hose, ladder, ventilation, fire streams, pump operations and other practices, the Stephens Department was made to realize there was considerable property within the city too far distant from water mains to be effectively protected with the fire equipment it had

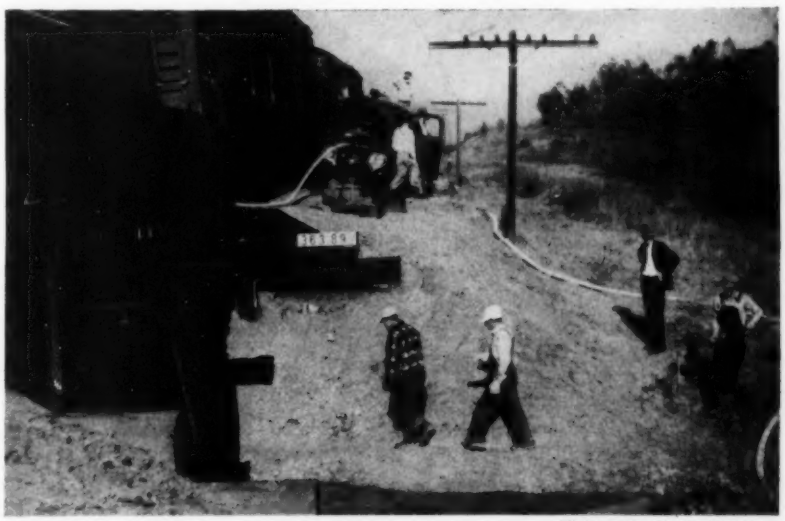


Photo courtesy Stephens Vol. F. D.

Ingenuity of volunteers displayed by Stephens firemen. In order to get water on fire involved stacked freight cars in Cotton Belt freight wreck, volunteers drove pumper down the right-of-way, near Magnolia, Ark. Water dam, referred to in article, may be seen in immediate foreground.

available. The lack of water mains was due to the sudden increase of the community's population to approximately 1,500 as a result of an oil boom. The problem was further complicated by the fact that the fire force was situated in the midst of this oil field, with quite a few of these oil wells, together with their necessary tank batteries, within the corporate limits; with an oil refinery adjoining the city, which is situated on a Federal highway, which passes through the center of the business district and over which travel loaded and empty transports carrying all types of oil products every few minutes. All this made fire fighters realize the inadequacy of this one piece of apparatus.

Survey Indicates More Apparatus

Members then made a survey, which showed there was almost as much residential property within a five-mile radius of the city as there was within the city. This property and the owners are very important to the economic life of the community. These facts further emphasized its need for another piece of apparatus, specially built to department specifications to enable firemen to afford this area proper fire protection. And this brought up the problem of "selling" Stephens officials and its people on buying this apparatus.

These interests were finally sold on spending enough money to buy the apparatus; it then became necessary to sell the oil companies, the refinery, and the rural property owners on the wisdom of raising enough money to equip the apparatus with hose and the necessary special tools and equipment. This was done, not without a struggle, and the department built according to its own specifications. It was another 500-gallon pumper, on a heavy Ford Chassis, with a 700-gallon booster tank. It was equipped with wet water proportioner; space for carrying liquid foam and other chemicals; foam nozzles; resuscitator; mask, and a full complement of hose; booster lines, ladders and small tools, as well as special types of tools.

After receiving delivery of this piece of apparatus, the officers realized the department would have to have special training and study because it would thereafter be called on to fight oil, butane and propane fires, and all types of rural fires. With regard to the oil fires, the department would not only have to afford protection to Berry's Oil Refinery, because it had no fire-fighting equipment with which to combat a fire of any magnitude, but also men would have to be trained to fight fires in oil pits, oil tanks, and transports carrying gasoline, kerosene, naphtha, diesel fuel, wax distillates and even raw crude oil.

Fire fighters would have to be trained in fighting butane and propane fires in storage tanks and transports as well in the retail delivery trucks. They realized they should be trained to fight rural fires in order to save the more property with the least water.

The department immediately made the new apparatus its No. 1 unit, as it would go directly to any fire and, in the majority of cases, it would not be necessary to lose time catching a hydrant but could get right to work on the fire with the 700 gallons of water it carried.

All of these facts brought home to the Stephens fire fighters the fact that they needed lots of study and practice. The only way they could do this effectively was to have a drill ground. Adjacent to the fire station was a plot of ground 60' x 240' belonging to three Stephens citizens. They were approached and readily agreed to give the volunteers a life-time lease on this property for the use of the department.

Firemen first constructed a 2-story drill tower out of material that was given to them by another citizen. He presented it in the form of a large barn which the firemen dismantled.

This drill tower is 12 feet square, measures 32 feet to the ridge, has an inside stairway and attic with peaked roof. Firemen placed a hole in the roof and capped it in order to do actual work on ventilation practices. Also they installed windows and doors, to make tower as near like a 2 story frame residence as possible. The roofing, paint and nails were all donated, making total cost of the drill tower to our department of less than $100.00.

Next the volunteers constructed a "Christmas Tree," approximately 7 feet high, for actual training with butane and propane fires. This cost the department nothing as the pipe was donated, and a local machine shop did the work gratis. In order to complete the drill ground, the men then constructed an oil-spill tank and an earthen pit for operating on all types of oil fires. The members of the department furnished all the labor.

Upon the completion of the drill grounds, the assistance of the State Fire Instructor was again solicited to help the Stephens instructors initiate the various phases of training and the operation of the specially built piece of apparatus, in order that the men would be ready to fight any type of fire.

Over a period of several months considerable progress was made and the volunteers began to learn so many things about combatting fires of special nature that the State Fire Instructor called for a regional firemen's school

(*Continued on page* 314)

Photo courtesy Arkansas Gazette

The Stephens rural truck, with its 750 gallons of water and wet water devices, pulls up before newly-threatened area in heat of forest fire zone.

Photo courtesy Arkansas Gazette

One of the Stephens, Ark., volunteers at work during protracted forest and brush fire ordeal, described in this article.

Practical Fire Service Rescue

Part 6 of a Series

By JOE MAHAFFEY*

GENERALLY, the contents of first aid kits are similar. It will be noted by those who have studied the matter that in modern first aid practices the trend is away from antiseptics, stimulants, cathartics emetics, salves and ointments. None of these are recommended too highly for the use of fire department personnel when giving first aid to the public. Many persons are allergic to even the most commonly used forms of antiseptics. Good first aid can be given without them. By not using them it is certain that nothing has been done to interfere with any definitive treatment intended by the doctor.

The following items are recommended as contents for the first aid kit:

Bleached muslin sheets—60" x 72"—Sterilized after packaging—1 per unit
Triangular bandages—Sterile—40"—1 per unit
Gauze bandage—Roll 4" x 10 yd.
Gauze bandage—Roll—2" x 10 yd.
Adhesive Plaster—Roll—1" x 10 yd.
Bandage—4"—1 per unit
Absorbent Gauze compress—24" x 2 yd. —1 per unit
Compress—3½"—1 per unit
Compress bandages—3"—2 per unit.
Compress bandages—2½"—2 per unit
Compress—Adhesive—Waterproof—16 per unit
Eye dressing packet—1 per unit
Ammonia inhalants—10 per unit (use sparingly and only when case is understood)
Wire splint—1 per unit
Tourniquet—1 per unit (use only as last resort to stop bleeding)
Bandage Scissors—5½"—with one blunt point
Tongue depressors—wood (in sealed envelope)
Glass sipping straw and paper cups
Safety pins
Pr. tweezers
Small package salt (for wounded abdomen with intestine protruding)
Clean twine

In rural or mountain area it might be advisable to add a snake-bite kit, a small package of soda, and a can of petrolatum. As accessories to the first aid kit, several types of splints and cotton for padding should be carried in the rescue apparatus. There are on the market cardboard splints with strings attached. These come in different sizes; ankle, leg, thigh and arm and greatly facilitate the act of splinting. An assortment of these and wooden splints including a long one for spine fractures are important.

The Burn Kit

In addition to the first aid kit there should be a special burn kit. In the Fire Service one of the most common cases where first aid is needed is the treatment of burns. The burn kit should not be considered as merely a first aid kit but as a container and contents prepared especially for the treatment of burns. At the scene of a fire, one person may receive a minor burn or many persons may receive major burns simultaneously. The rescue service should be prepared to cope with either emergency. The burn kit should contain bandage shears, sterile sheets, triangular bandages, 2 and 4-inch sterile gauze roller bandages, adhesive tape, rubbing alcohol, castor oil in dropper bottle, tongue depressors and safety pins. All broken packages of sterile goods should be replaced.

For the sake of those who are new to the Fire Service, the following directions should be attached to the lid of the burn kit:

FIRE DEPARTMENT PROCEDURE IN THE FIRST AID TREATMENT OF BURNS

1. If the burn is extensive and transportation is immediately available and the distance to a hospital is not great (within 1 hour):
   a. Leave all clothing on; bandage with triangular bandages and sheeting and wrap in blankets.
   b. Bandage feet and hands without separating digits with gauze.
   c. Let victim walk to ambulance if necessary for the sake of speed.
   d. Otherwise disregard air, friction and discomfort for the sake of speed.
2. If the burn is extensive and transportation is not immediately available, or the distance to a hospital is great (as in rural or mountainous areas):
   a. Wrap victim in blanket except where it is necessary to work.
   b. Keep victim lying down and quiet.
   c. Cut clothing away from burned area except that which sticks.
   d. Bandage carefully with dry bandages, preferably hard cloth. See that cloth is firm to all burned portions to exclude air pockets. Bandage arms and legs separately so that adjacent burned areas will not touch. Separate fingers and toes with gauze before bandaging hand or foot.
   e. Wrap in blanket to conserve body heat.
   f. If victim is in full control of his faculties water may be given in small sips. Water with ½ teaspoon of salt, soda, or both to one quart of water is beneficial. If the giving of water causes vomiting it should be discontinued.
   g. Transport victim to destination in stretcher.
   h. Wrap in blanket to conserve body heat. Give water (½ teaspoon of salt, soda, or both may be added to 1 quart of water for drinking). Transport victim to ambulance in stretcher.
3. Minor burns:
   a. Cut clothing away from burns except that which sticks.
   b. Use dry dressing. Bandage lightly but firmly with several layers to avoid friction and to exclude air. Put on top bandage with triangular bandage.

Automobile Wrecks Provide a Variety of Work for the Rescue Company

Rescue of entrapped riders and the treatment thereof for injuries and burns are but two of the many emergency services which may have to be rendered. The picture above shows bystanders dragging one of four victims of a smash-up at Corona del Mar, California, last August, away from the burning wreckage. Although all were injured, fortunately there were no fatalities.

c. Advise victim to see doctor immediately.

4. If the burn is from acids, chemicals, alkalies or steam:
   a. Flush off thoroughly with water. If eyes are affected, flush out (drinking fountain is ideal for this purpose).
   b. Treat as above.
   Do not attempt to neutralize (see exception, No. 5).
5. If the burn is from carbolic acid:
   a. Dilute with rubbing alcohol.
   b. Flush off thoroughly with water.
   c. Treat as above.
6. If the burn is from electricity and the flesh is seared:
   a. Remove clothing from area.
   b. Use dry bulky bandage over area.
   c. Maintain body warmth with blanket. Maintain circulation.
   d. Check for other possible burns.
   e. Rush to hospital.

Do not attempt to remove foreign substances stuck to burns.

Castor oil may be dropped into burned eyes. Use dropper.

The Blanket Case

The blanket case is always important in first aid. Blankets are used to conserve body heat in shock cases. Shock in some degree is attendant to all accidental injury and sudden illness.

The blanket case should be so constructed that it can be easily carried into buildings, up and down stairs, ladders, etc., and should contain at least five blankets. More blankets should be available for major disasters.

On cold or wet pavement or similar conditions, blankets will not conserve body heat unless they are used under as well as over the victim. Blankets should be kept in the case to keep them free from dust or other matter that might aggravate the condition of the victim. Whenever blankets have been used, they should be immediately laundered.

The Stretcher

It is obvious that the stretcher is an important part of first aid and rescue equipment. Sometimes it is necessary to improvise to transport victims, and this can be done by using doors, boards, blankets and pike-poles, salvage covers, etc.; but when a stretcher is readily at hand, much valuable time can be saved.

Stretchers of the Stoke's Navy Stretcher type may not fit all persons or all occasions; but for the average victim they are probably the safest and best for transporting, for raising and lowering by elevator or rope or ladder, and for immobilizing in the case of fractures.

When there is not sufficient space in the panel body type rescue apparatus to carry a Stoke's stretcher without cutting down head room, it may be necessary to carry a folding canvas stretcher which takes up little room. It is still advisable to have a Stoke's stretcher available to place in the apparatus when it is known that the response will be to raise or lower an injured victim.

Acetylene cutting torch, Navy pack type, with spare tanks, asbestos blanket and hand extinguisher.

The Blake All Purpose Stretcher

Made of heavy canvas with binding straps and rope rings, this stretcher or bag is suitable for raising or lowering victims through small apertures such as scuttles or manholes in an upright position.

Flexible, because of its divided handle, it is suitable for transporting victims up or down winding staircases or through twisted wreckage. Victims of heart attack can be transported in a sitting up position. It is an important part of rescue equipment.

Reinforced Canvas Bag

Because it would be difficult to securely tie an infant without injury, for raising or lowering, with the size ropes provided for rescue, a strongly reinforced canvas bag should be provided for this purpose.

The Back Rest

In our study of first aid, we have learned that, though in most cases it is best to keep the victim of an accident or sudden illness in a prone position, there are exceptions, such as some types of heart ailment, etc., in which the victim can breathe only in a propped-up position.

On the street or sometimes even in a home, it is difficult to find some immediate means of propping the victim in a comfortable sitting position. To be prepared for this emergency, it is advisable to equip rescue apparatus with a backrest.

The backrest is a folding affair which, when collapsed, takes up little room. It consists of a light, wood frame and canvas backing and can be adjusted to any desirable position. There will be many cases when rescue personnel will find it to be of use.

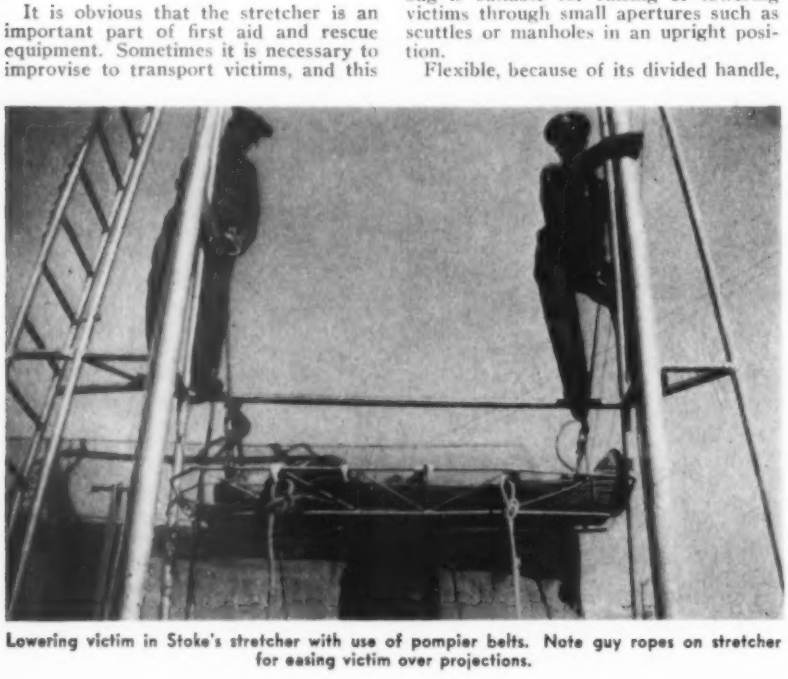
The Canteen

In our study of first aid we find that the canteen is an important part of rescue equipment. Except for ordinary inhalator runs, most rescue response will be fire-connected; and it is reasonable to assume that most first aid work will involve burns.

We have learned that we can help prevent shock in burn cases by giving water. Thirst can be a cause of shock. By giving water we may help to compensate for loss of body fluids through burns and perspiration. In some cases, water is also used for the external treatment of burns.

It is important that we know when to give water. It is also extremely im-

(*Continued on page* 318)



Lowering victim in Stoke's stretcher with use of pompier belts. Note guy ropes on stretcher for easing victim over projections.

Arson Investigation

3. Possible Accidental Causes

By BERNARD W. MULCAHY
Chief, Fire Prevention Bureau, Cleveland, Ohio

In investigating fires, possible accidental causes must be considered, as well as arson. Check all stoves, furnaces, ovens, lamps, candles, open gas flame or other open flame or heated pipes, driers or surfaces that could have produced temperatures which would start a fire. Ascertain whether smoking was permitted or if smoking or matches have been responsible for the fire.

Heating apparatus is the cause of many fires. The inspector should check the distance between a heating device and walls and partitions; also each partition where a smoke pipe passes through and is not properly protected. The continued application of heat and the heating in the vicinity of a stove or furnace will in time drive all the moisture from the wood and greatly lower its ignition temperature. He should also check to see whether rubbish or old boxes have been stored in the basement where they could have ignited from a spark from the heating device.

Check: How were the ashes stored? Were they in non-combustible containers? Could the fire have occurred as a result of a settling of the building or the foundation? Such settling causes cracks and crevices in chimneys, dangerous holes in smoke pipes, stove pipes, etc. In many cases, in old dwellings, the chimneys may not have been built on a solid foundation. They settle and cracks and crevices appear, which permit the escape of hot gases and live sparks. Fires from defective chimneys may also have been due to beams built into the chimney. Where the fire started near a chimney or furnace, look over the furnace plant and with the aid of a mirror, check the chimney for cracks or broken tile.

Check the electrical system and apparatus in the vicinity. The causes of electrical fires are sparks, arcs, and heated resistances. Determine if the system is overloaded. This can be done by checking the fuse boxes to see if the regular fuses have been replaced with fuses of a higher amperage, or the circuit breaker is set higher than was intended for the system. Look for defective wiring or wiring installed by others than a qualified electrician. Check all electrical machinery or motors in the vicinity to determine if they could have been responsible. Carefully examine any radio or television receiving sets and their installation. Look over any electric irons, blankets or other electrical devices.

What were the weather conditions? Were there any electrical storms, and could lightning have played any part in the starting of the fire? If he thinks that the fire may have originated from electrical causes, he is to check and see that the electricity was turned on at the time. In many cases, where the fire had been determined as due to a short circuit, it was found on later investigation that the current of the building was shut off at the time of the fire.

The investigator should assign no cause until he has investigated the fire thoroughly. With electrical fires, he should check the fuse box or circuit breaker—the electric switches; were they in the "off" or "on" position? What was the appearance of the fuse box? Had the fuses been replaced with improper fuses, pennies or copper wiring? Where he determines that the fire started from a short circuit, he should check to find bare electric wires or wires running through partitions not properly protected, wires with improper joints and without proper insulation. When electricity is given as the cause of the fire, the investigator should check on how long the wiring has been installed. Were the proper permits obtained for such installations and did a competent electrician do the work?

Examine carefully all machinery. Could friction from hot bearings, rubbing belts, sawing, cutting, polishing, drilling or from any other cause have started the fire? The probability of fire starting from these causes can be determined from the physical evidence, and the facts that can be obtained from persons present at the time of the outbreak. Check cutting and grinding machines. Were magnesium, aluminum or other combustible metals processed? Check machinery for evidence of poor housekeeping. Dust or Grease: If they could have been responsible, check source of ignition.

Were any chemical reagents, acids, or oxidizing agents used or stored in the vicinity where the fire started? Could the fire have started from spontaneous heating or chemical reaction? Look for the presence of substances capable of spontaneous heating, such as drying oils, linseed, soya bean, olive oil or impregnated fibrous materials, such as cotton waste.

Where agricultural products are stored, particularly hay, spontaneous ignition may have been responsible for the fire. Also, look for barium oxide, unslaked lime, sodium peroxide, and similar chemicals which evolve sufficient heat to cause ignition when in contact with moisture.

When no reason for a fire can be found in the immediate vicinity of the outbreak, fix the distance accurately by measuring with a steel tape line from the nearest open flame, heating plant,

The arson investigator at the left, with a searchlight, scrutinizes the embers for possible clues. The inspector at his side examines suspicious looking tanks found in the vicinity.

electric wiring, appliance or anything that could be claimed to be responsible in court for an accidental fire. Note any intervening structures between the two places and take photographs to substantiate this point.

Where explosion has preceded fire, the investigation must make a careful inspection to determine exactly what was responsible for the explosion. All explosions give a flame which varies in volume, duration and temperature depending upon the agent responsible for the blast. Flammable liquids and artificial gas give the longest lasting flame. Gunpowder creates quite a flame and generates a high temperature. Most dynamites and high explosives develop a flame which is not long lasting but which is very hot; however, because of the detonation, fire seldom follows explosions where high explosives are responsible.

Gases, dust and flammable liquids are termed low explosives and are deflagrating, which means that they burn progressively over a relatively sustained period of time in comparison with the high, or detonating, explosives. These decompose practically instantly. The low explosives are slow acting and highly heated gas is released with a shirring and pushing tendency. Their energy depends on a relatively slow development of gas pressure and their destruction usually leaves large firm fragments in the vicinity of the blast. Fire usually follows the use of a low type of explosive.

Where there has been an explosion, causing the fire, or occurring during the progress of the fire, it is essential to determine exactly what could have been responsible for the explosion. In pursuing this line of investigation, it is important to know what gases, vapors, or dust would be generated, used or present, in the operation of the industry. The force exerted by this explosion is also important. This can be determined by the effects on the building. Examine the heavy timbers and supports of the building and the walls to see how far objects have been hurled and what alterations, distortions or breaking was produced in the walls or on machinery, etc. Observe any partitions, whether the walls have been driven inward or outward by the force of the explosion. This is important in determining at what place the explosion occurred. Here a careful check should be made to see what special operations were carried on.

Arson investigator tests evidence taken from fire remains and finds flammable substance present.

What materials were stored or appliances used that could be responsible for the explosion. Where there is no reason for explosive materials or gases to be stored or used on the premises, the heating and gas appliance should be carefully examined. Look for open gas cocks, broken or disconnected pipes, and attempt to locate a source of escaping gas. Where it is indicated that inflammable gases or vapors produced the explosion, their source should be located and the reason for their presence ascertained. In many manufacturing operations today, the multifarious and constantly fluctuating conditions make it difficult in cases of an explosion to determine the exact cause. During the war many firms were using unknown or secret processes in new productions. These dangerous operations would have been prohibited in normal times, and today we must be doubly careful in our inspections to ascertain if such operations are still carried on.

Look for evidence of leaking gas and check all pipe connections with stoves and meters. He should check whether such connections have been made by an experienced plumber. Where he is quite sure that a gas explosion preceded the fire or occurred during the fire and can find no reason within the building, the gas mains in the street leading into the building should be checked. Frequently, in severely cold weather, gas mains leading into a building are ruptured by frost or other reasons. Where coal fired furnaces are used, the heating plant should also be checked. Could the explosion have been caused by unburnt coal gases in the furnace, pipes and chimney? There have been many cases of mysterious explosions due to the improper firing of furnaces. Carbon monoxide gas is generated and, as soon as it comes in contact with an open flame, a violent explosion occurs setting fire to the building. In checking for this cause, he will usually find the furnace door blown off, the furnace and pipes ripped and torn, and, in rare cases, the chimney blown down.

When explosions occur in buildings or parts of buildings where there seems to be no reason for an explosion, such as the space under the roof or in a building where it is known that no explosive materials are stored or used, check the possibilities of a superheated air explosion commonly termed by firemen a "backdraft." This type of explosion is caused by a smoldering fire which has generated carbon monoxide because of a lack of sufficient oxygen and ignites violently when sufficient oxygen is supplied. Minor explosions may also be caused in spaces under the roof or out of the way places which are generally covered with dust. In most instances superheated air finds its way into these concealed spaces, sets up a strong draft which disturbs the dust and generates a

Note chair under door knob to impede fire department.

cloud. This provides an ideal condition for a flash and frequently the dust ignites and an explosion results.

Every effort must be made to determine the cause of a fire. No investigator should put down his conjecture, or guess, as to the reason for the outbreak. Unless and until he can point to the agency that started the fire, and sustain his judgment with logical and conclusive physical evidence, he should permit the cause to remain undetermined. He must also use extreme care in order not to be deceived by certain types of incendiaries who use heating equipment, the electric system or gas which is in the building, to deliberately deceive the investigators as to the accidental nature of the fire and leave evidence to indicate that the fire was caused by one of these agencies.

Where the cause of the fire cannot be determined, or there is a prima facie evidence that the fire was deliberately set, the investigator must continue his investigation with the purpose in mind of obtaining sufficient evidence to warrant a conviction in court should subsequent evidence confirm the fact that the fire was of incendiary origin.

Where the investigator suspects the fire to be suspicious, the next step is to determine whether the fire was one of delayed ignition or immediate ignition. If the fire was of delayed ignition, which is frequently the case where the arsonist wishes to establish an alibi for the time of the outbreak, this will be revealed by various timing devices, such as clocks, candles, chemicals, etc. He must search diligently for such articles.

A favorite tool used in incendiary fires is a wax or paraffin candle. These candles may be placed on paper cartons filled with excelsior or nitrocellulose film; they are also used with materials saturated with flammable liquids. When the flame of the candle penetrates into the highly combustible materials, a quick flash fire results. The use of a candle gives the arsonist time before the outbreak of the fire to establish an alibi. Different sizes and length of candles are used and after an intense fire seldom leave any evidence of their presence.

Trails and leads are also another device of the arsonists. Trails are usually twisted paper, excelsior, cotton or similar materials soaked in kerosene or gasoline and laid to a pile of quick burning material, such as shavings, flammable liquids or other highly flammable goods. Cords or strings saturated with a combustible oil are used as leads. Such trails and leads, however, do leave evidence which can be discovered and correctly interpreted. Where such devices are suspected, the investigator must carefully examine the floor or carpet for trail marks burned into the floor or nap of the rug. Where such are found, photographs of this will be very valuable in establishing the use of this device for setting the fire.

Other devices for delayed ignition are electric wires, electric hot plates, toasters, and soldering irons. Electric-light bulbs can be used for starting a fire by delayed ignition. These bulbs may be set in a plant made up of light combustibles and the current turned on. It is common knowledge that such light bulbs will in a short time heat up to the point of ignition of materials into which they are imbedded.

Alarm clocks, electrical timing devices and bottles or flasks containing such chemicals as metallic sodium and potassium, white phosphorus, calcium carbide, or unslaked lime may be used to delay ignition until the perpetrator has had time to establish an alibi.

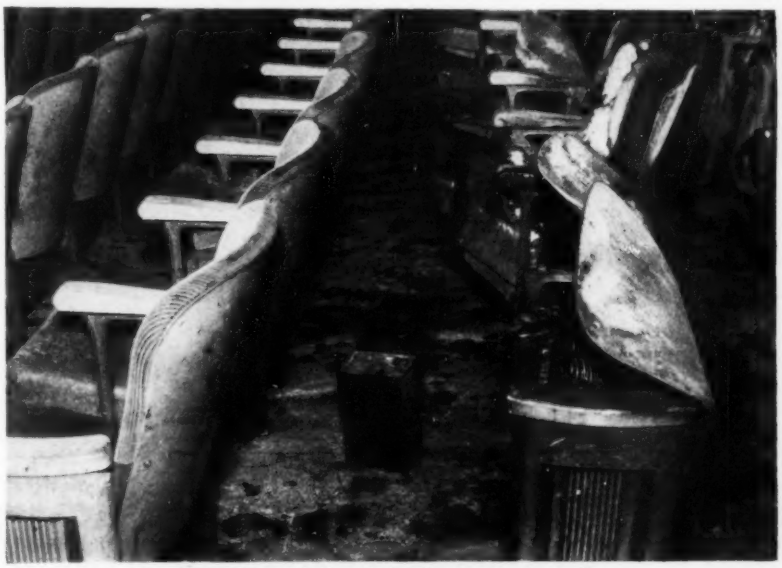
In fires where immediate ignition is indicated by the evidence, the preparations of such fires are usually comparatively simple. Paper, excelsior, shavings and some other combustible materials are usually gathered under a stairway or below a gas meter and simply ignited with a match. With this type of ignition, you will usually find multiple fires with no connection between them. Gasoline, kerosene or alcohol may be used in this type of fire.

Where the evidence points to multiple fires, it is extremely important to determine if the several fires found were separate and distinct fires, starting simultaneously or if the separate fires could have been started from flying sparks, radiation or convection. In determining this, the statement of firemen or other witnesses will be extremely important. Also, check to be certain that electric wiring is not responsible for the multiple fires. Where in doubt, consult with an expert electrician.

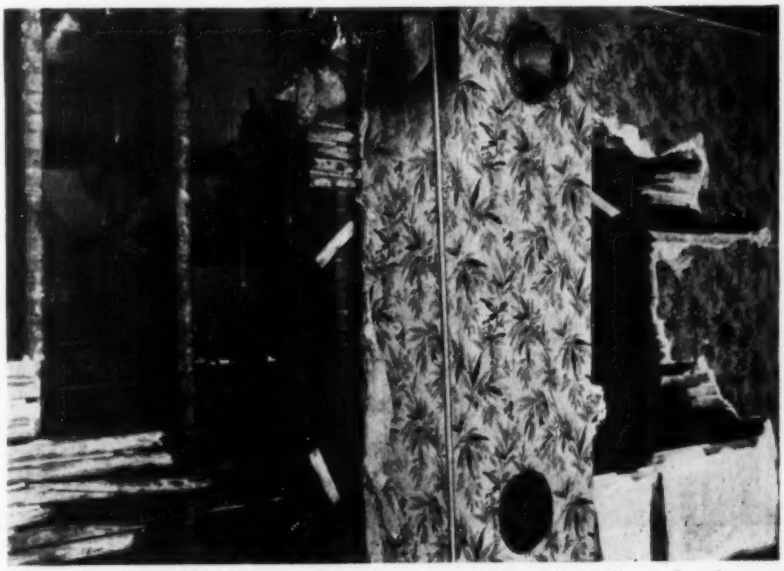
Fires of immediate ignition are usually started by the direct use of matches applied to flammable materials. However, in some cases, paper books of matches have been used and ignited by placing a burning cigarette in the container. Where matches have been used to start a fire, very often more than one match was necessary and the remnants of the matches may be found under the debris near the point of origin of the fire.

It is extremely important that, where the investigator finds the remains of material used to start a fire, this material be submitted to the chemist for a thorough analysis. The chemical expert's testimony will be essential in court, to testify as to the nature of the

(*Continued on page* 319)



Note pattern of char which indicates use of gasoline.



Chimneys are responsible for many fires. Only a careful inspection will reveal real cause.

ARSON SUSPECT ARRESTED AFTER COSMETICS FIRE IN HOLLYWOOD

Ignition of Flammable Vapors Spread Fire Throughout Building; Plant Had Two Previous Fires

By Paul C. Ditzel

LOS ANGELES Fire Department arson investigators arrested an employee of Max Factor, Inc., cosmetics manufacturers, after a two-alarm fire, March 9, caused an estimated $400,000 damage to a warehouse of the company.

The fire was the third blaze of consequence in Max Factor property in Hollywood since February, 1952.

A peculiarity of the fire was a sudden outward rush of cool air shortly after the first-in engine company advanced its line inside the door of the warehouse. Although arson investigators hesitated to call it a back draft, the sudden gush of air blew helmets from the heads of the firemen. The helmets were pitched across the street on which the building fronted. None of the firemen was injured.

The flame-damaged building was a one-story brick affair with an arch-ribbed wooden roof containing skylights. The roof also had two supporting arches. Although the 100-foot wide and 120-foot deep building was unsprinklered, it contained an A. D. T. system.

There were eight steel sash windows along the south wall of the fire building and another eight windows along the front. Plywood boards had been placed across these windows on the inside and only the topmost part of the panes were exposed. Consequently, the fire was difficult to spot from the outside of the building.

The warehouse was used for storage of various types of cosmetics, raw materials for cosmetics and empty polyethelyne bottles used as containers for various Max Factor products which are dispensed simply by squeezing the plastic-like bottle. Also stored was pancake makeup, shaving lotion, hand lotion, cleansing cream and other cosmetics. All merchandise was in paper cartons and on skids.

Arson investigators Norman Jackson and Richard Bast said the flammability of the alcohol base for the cosmetics, particularly the lotions, had "no particular significance that we know of" to the rapid spread of fire throughout the warehouse.

Chemical studies were to be made by the arson squad with the assistance of the Los Angeles Police Department's crime laboratory to determine if the burning polyethelyne bottles gave off invisible and highly flammable vapors when ignited. Arson investigators Jackson and Bast theorized the plastic bottles perhaps resulted in the rapid spread of fire.

The Hollywood warehouse's alarm system sent in the first alarm. The system operates through a network of hollow tubes running along the upper rafters of the building. The tubes have a pre-determined amount of pressure in them and, when the heat rises, it raises pressure of the air and sends in the alarm.

The alarm, ADT Box 917, was received at the ADT office and transmitted to the Westlake Signal Office of the Los Angeles Fire Department. Hollywood, contrary to popular belief, is a geographical and political part of Los Angeles. Dispatchers at Westlake sent a pre-determined assignment of three engine companies, including one of the city's famed manifold duplex rigs, one truck company, a salvage rig and Don Hibbard, Fifth Battalion Chief.

A city fire alarm box was also pulled by a citizen after the ADT box was received and numerous telephone calls were logged in at the Westlake office.

The initial alarm was received at 6:35 p. m., more than one and one-half hours after the warehouse closed operations for the day.

Chief Hibbard, whose quarters are close to the fire scene, was heard to report by radio: "Battalion 5 to all engine companies responding to 1140 N. Citrus Ave. . . . Lay coming in!"

Battalion Chief Hibbard entered an unlocked door of the building and directed the crew of Engine 27, the manifold duplex rig, to advance their line into the structure. Chief Hibbard told arson investigators later that when he first saw the fire it was small enough to be

Los Angeles F.D. Photo by Cecil R. Lynch, Jr.

Los Angeles firemen operate hand line into cosmetics filled warehouse in Hollywood. Arson investigators later arrested a plant employee.

Los Angeles F.D. Photo by Cecil R. Lynch, Jr.

Liquid cosmetics ooze from the Max Factor, Inc., warehouse fire in Hollywood. Note packing cases stacked next to window at right.

Los Angeles F.D. Photo by Cecil B. Lynch, Jr.

Area where fire started is shown just behind the air compressor in the center part of this picture.

controlled by one engine stream. He left the building to tell the second-due engine company to hold the water in the second line.

Less than two minutes later the fire suddenly flashed in the upper portion of the warehouse. Firemen likened the flash and resulting burst of air to a back draft. Technically, it was not. The sudden flash caused Engine 27's crew to immediately evacuate the building and the burst of air knocked some of them to the ground and blew their helmets across Citrus Avenue, Arson Investigator Jackson said.

Later investigation showed what apparently occurred was an ignition of gases in the upper part of the warehouse. The ignition pushed downward and caused a tremendous outrush of "cold air" at the lower level. This outrush created a draft condition at the only door which was open at the time. Mr. Jackson said a true back draft ordinarily is an explosion but said the outrush of air could hardly be termed that. Fact that none of the firemen was burned by the burst of air indicates how cool the air must have been.

Engine 27's crew, after recovering their equilibrium, pulled their handline from the building hand-over-hand because the sudden burst turned the inside of the warehouse into a blazing oven.

Seven minutes after the first alarm, another alarm was ordered. A total of six engine companies, two trucks and one salvage rig attended the fire. Other chief officers at the fire included Second Division Chief Leonard Eggleston and Headquarters Assistant Chief Frank E. Winkler.

Streams were operated from roofs of nearby structures and through the large windows on sides of the warehouse. The wood roof soon fell in and sent firebrands flying over the area. For a time the wind blew the flames toward a row of business structures facing on busy Highland Ave., but fast work prevented the fire from communicating to any other buildings.

Although Los Angeles Fire Department operation calls for immediate notification of the arson detail whenever a loss of any consequence occurs, arson personnel were on the fire ground shortly after the second alarm was sounded. They immediately began to seek a reason for the rapid spread of the fire.

A witness told Arson Investigators Jackson and Bast that he was driving along Citrus Avenue when he observed a man run across the street from the warehouse. At the same time the witness heard the ADT bell on the outside of the building begin to ring. The witness was able to give arson investigators a detailed description of the car.

An employee of a nearby concern told the arson men that he, too, saw a man run from the warehouse and get into the car as the ADT bell went off. Description of the car tallied. The witness said the suspect made a "U" turn and drove north on Citrus Avenue and east on Lexington Avenue and disappeared.

Another witness supplied Mr. Jackson and Mr. Bast with the information that the warehouse door was open before firemen arrived. This witness, however, did not observe any suspicious persons. Close examination of the lock on the warehouse door showed that it could only be opened with a key. The lock was flush on the door and the lock had not been forced.

Several hours later, arson investigators arrested an assistant warehouse foreman who steadfastly denied any knowledge of the fire. The foreman, an employee of Max Factor's since 1942, had a car which was identical to the description supplied by witnesses.

Then Arson Investigators Jackson and Bast came up with the clincher. Another witness, 24 hours after the fire and apparently after reading in the newspapers that arson was suspected, supplied Mr. Jackson and Mr. Bast with a license number of a suspicious car which he jotted down minutes before the fire broke out. The license number was identical to the plates on the suspect's car. The foreman was booked on suspicion of arson and sent to City Jail pending issuance of a complaint by the district attorney's office.

Despite intensive questioning of the suspect, the arson detail was unable to ascribe a motive for the fire. The arson investigators tentatively believed that the blaze was set to cover a possible burglary.

Checking back into past fire records, the arson men found that Max Factor suffered a $1,200 fire in their Sycamore Avenue, Hollywood, warehouse in February, 1952. Careless smoking was believed to be the cause of that fire.

Then, in July, 1952, a $9,000 blaze damaged the same Citrus Avenue warehouse. The arson investigators then were unable to find a natural cause for the fire and listed the blaze as undetermined. Arson Investigator Jackson said that the employee under arrest was not under suspicion for either of the earlier fires.

Only casualty of the fire was Fireman Arthur Fish of Truck 27 who suffered an injury to his left heel bone.

Jack Abrams, controller for the Max Factor concern, said the destroyed materials included "at least $300,000 worth of chemicals." Mr. Factor, however, upped that estimate by another $100,000.

Log of Alarms:

6:35 p.m.—ADT alarm, 1140 N. Citrus Ave., Hollywood. Engines 27, 51, 41; Truck 27; Salvage 27; BC 5.

6:42 p.m.—Second alarm, 1140 N. Citrus Ave., Hollywood. Engines 52, 61, 82; Truck 61.

7:41 p.m.—Utility 27. (Illumination.)

Moveups: Engines 35-27; 45-51; 32-52; 68-61; 6-35; Trucks 29-27; 28-29.

The author wishes to express his gratitude to members of the Los Angeles Fire Department's arson detail and the department's photo and publicity section for their generous assistance in preparing this article.

Chief Campaigns for New Reservoir—and Gets It!

Normally, fire chiefs who are confronted with the need of increased water supplies are content merely to indite requests and recommendations to their municipal authorities and let it go at that.

It was different with Fire Chief Al Koltonski of Rutland, Vt. Al, as he is affectionately known to members of the International Association of Fire Chiefs and the New England Association of Fire Chiefs, couldn't stand by and wait for hoped-for action to be taken on a long-discussed 80-million-gallon reservoir to improve the quantity and quality of the City's water. So he went out and campaigned actively for it, making fullest use of all printed media—newspapers, direct-by-mail; as well as radio; moving pictures; billboards and word-of-mouth promotion.

The sum involved was $397,000. But Al got it! Thanks JOHN O'HEARN.

February Fire Losses

Estimated fire losses in the United States during February amounted to $72,706,000, it was reported by the National Board of Fire Underwriters.

According to Lewis A. Vincent, NBFU's general manager, this $72,706,000 loss represents an increase of 4 per cent over losses of $69,925,000 reported for February, 1952, and a decrease of 5.2 per cent from losses of $76,659,000 for January (1953).

Losses for the first two months of 1953 now total $149,365,000, an increase of 3.6 per cent over the first two months of 1952, when they amounted to $144,080,000.

These estimated insured losses include an allowance for uninsured and unreported losses.

Training Takes to the Road

Ohio is not the first state to have a traveling training and demonstrating unit, but it is the latest to make use of such a medium, and its new "caravan" combines a number of original features.

The new unit recently placed in service by the Division of the Fire Marshal, Department of Commerce, State of Ohio (Charles R. Scott, Fire Marshal), is to be used throughout Ohio to further fireman's training and education in all fire departments. It is also being used to disseminate fire prevention education to all Ohio citizens.

The unit is built on a Ford F-5 chassis, with 134 in. wheel-base and a Vanette body. Special body work was done to meet certain specific needs of the Fire Prevention Bureau. The unit includes fire fighting and first aid equipment, and necessary teaching aids for instruction in the many phases of fire fighting. In the event of a major catastrophe, the vehicle can serve as on-the-scene headquarters for the State Fire Marshal, complete with desk space, radio communications and self-supplied light and power. While not primarily designed as an emergency truck, the vehicle carries the necessary equipment to meet most common emergencies.

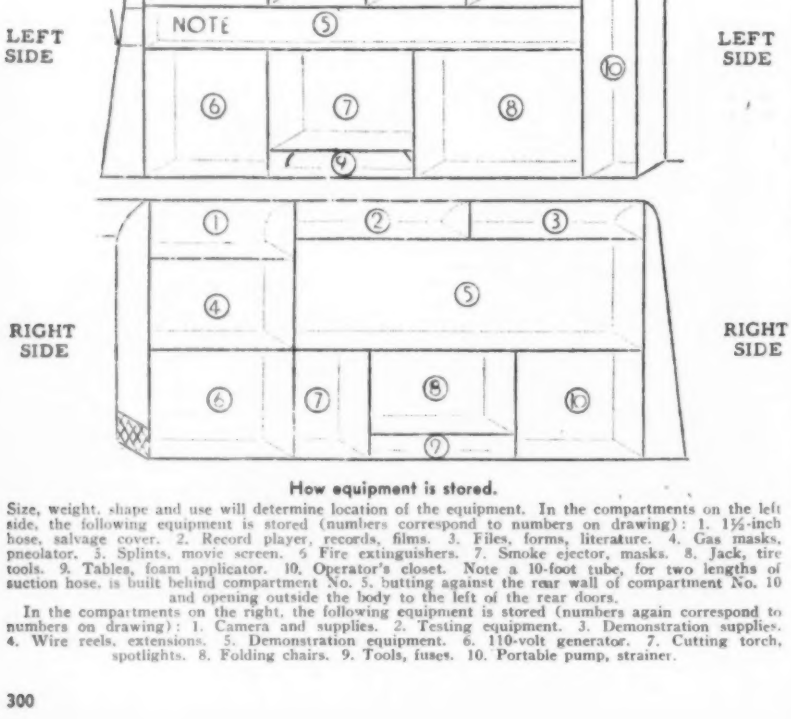
All compartments are framed with 2 in. x 2 in. x ⅛ in. angle iron covered with 20 gauge sheet metal. Cabinet doors are constructed of 14 gauge sheet metal and secured with special screw fasteners. All portable equipment is secured by brackets and web belts. Compartment doors are lettered in gold.

Cabinets have been built into the exterior walls of the unit to house equipment that could not conveniently be carried inside. Outside compartment doors are sealed with rubber gaskets and have locks. One key will open any compartment. Cabinets are deep enough to house all necessary equipment and yet permit an adequate aisle. The radio transmitter-receiver and public address amplifier are on a shelf above the driver. Even the suction hose sections are enclosed, as are the oil pans used for demonstrations. The accompanying diagram shows the left and right sides of the unit with compartments and contents.

Ohio's new training and demonstration unit.

For those who might desire details, the equipment carried, and the original cost are listed below:

Description	Cost
16 MM movie camera	$365.00
16 MM movie projector with PA	550.00
Five cans mechanical foam	25.00
Set 16 MM training films (Instruction)	1,000.00
Set fire department fittings	100.00
Set Rogers rope hose tools	10.00
Fire helmet	10.00
Pair rubber gloves	15.00
Bolt cutters	25.00
Double edged saw	15.00
Set of fuses	10.00
Set Nat. Board Standards	....
Set Nat. Fire Prot. Asso. Fire Code	30.00
Set Laws, State of Ohio	....
50 ft. quick action hose	17.00
5 gal. force pump	15.00
Chrome Indian Pump	45.00
Two 10-qt. folding buckets	5.00
Qt. safety can	4.00
Collapsi-cot	80.00
Portable pump	212.00
Two 10-ft. lengths 2½ in. suction hose	60.00
Two sets 2½ in. couplings	16.00
Portable cutting torch	170.00
Folding table	25.00
Six folding chairs	35.00
Vu-lyte projector	280.00
36-unit first aid kit	18.00
U. S. Army stretcher	13.00
Pneolator, complete	385.00
Wool blanket	9.00
Rubber blanket	4.00
Wood splint set	22.00
Chemox gas mask	130.00
All service gas mask	43.00
Three Chemox canisters	17.00
Three all-service canisters	17.00
Back type demand mask	165.00
Folding ladder—8 ft.	46.00
Fire axe and guard	10.00
100 ft. 1½ in. hose	140.00
1½ in. fog nozzle	47.00
1½ in. foam applicator	60.00
Pair electric wirecutters	25.00
Smoke ejector	140.00
Salvage cover	30.00
110 volt—1,500 watt generator	550.00
Two 500-watt flood lights	80.00
Two 15-ft. wire reels	56.00
Two 100-ft. lengths, heavy wire	55.00
Siren-light, less brake	60.00
Fire truck amplifier	115.00
Chest microphone	30.00
Two 8-in. speakers with swivel	100.00
Two additional swivel mounts	15.00
Record player	55.00
Installation of amplifier	50.00
Two heavy duty 6 volt batteries	50.00
Two-way radio complete	550.00
Three oil pans	25.00
High voltage transformer	20.00
Two folding tables (small)	40.00
Gas vapor explosion	12.00
Electric panel	96.00
Gasoline vapor track	40.00
Spark plug	12.00
Grain elevator	120.00
Set fire extinguishers	200.00
Open purchase order (#14) approved Aug. 18, 1952 for payment of small items	500.00
	$7,278.00



How equipment is stored.

Size, weight, shape and use will determine location of the equipment. In the compartments on the left side, the following equipment is stored (numbers correspond to numbers on drawing): 1. 1½-inch hose, salvage cover. 2. Record player, records, films. 3. Files, forms, literature. 4. Gas masks, pneolator. 5. Splints, movie screen. 6 Fire extinguishers. 7. Smoke ejector, masks. 8. Jack, tire tools. 9. Tables, foam applicator. 10. Operator's closet. Note a 10-foot tube, for two lengths of suction hose, is built behind compartment No. 5, butting against the rear wall of compartment No. 10 and opening outside the body to the left of the rear doors.

In the compartments on the right, the following equipment is stored (numbers again correspond to numbers on drawing): 1. Camera and supplies. 2. Testing equipment. 3. Demonstration supplies. 4. Wire reels, extensions. 5. Demonstration equipment. 6. 110-volt generator. 7. Cutting torch, spotlights. 8. Folding chairs. 9. Tools, fuses. 10. Portable pump, strainer.

Sydney, N. S. W., Calls Up

There were 11,515 fire calls recorded in the Sydney Fire District. This was an increase of 4,518 over the previous year. Of these, 2,611 were false, 77 were chimney fires, and 8,827 were other fires.

CONVERTED DUWK GIVES TOWN AN EFFECTIVE MARINE DIVISION

Volunteers Render Service in Community as Well as Along Extended Waterfront

By John A. Cox

THE blast of the fire whistle in Essex, Conn., determines whether firemen go up the street or down.

If they go down the street and come to the edge of the Connecticut River, their fire truck immediately becomes an amphibious fire boat!

The secret in the volunteer fire department's land or sea operations lies in a converted Army DUWK which the men picked up on the war surplus market.

Under the direction of Fire Chief John W. Downing, the firemen revamped the "duck" into a compact fire fighting unit at a cost of $1,500.

Pooling their skills, the firemen installed special marine fittings and hardware, navigation and search lights, life preservers, bilge pumps and a ship-to-shore radio.

The "duck also carries ample emergency gear such as first aid equipment, blankets, axes, rope, boat hooks, pikes, grappling irons, steel cable and a power-operated winch.

Protection to the costly yachts which ride at anchor or tie up at the dock in the town's marina comes from a 500-gallon-a-minute gasoline pump also picked up on the war surplus market.

Taking water from over the side in a hard suction hose, firemen can direct three regulation hose streams and a standard deck gun on a fire. It also carries a variety of nozzles and if the need arises, the unit can switch to fog, foam or carbon dioxide.

For land fires, the firemen have a choice of four or six wheel drive and, because of the unusual wheel suspension arrangement, they can take it over rough terrain for brush and grass fires. In town they can hook onto any hydrant and, in rural areas, pump from any nearby well, pond or stream.

Launching the amphibious fire boat is no problem. Any shallow bank will do and, once afloat, the craft is driven by a three-bladed propeller. It can do 10 knots and handles well on land at speeds up to 60 miles an hour.

The 60-member department staged a dress ball to buy the craft and put an estimated 1,200 man-hours into the conversion. They tore the unit down completely and revamped first the hull and then overhauled the engine. Waterproof brakes were remodeled.

The "duck" is tied into two nearby municipal fire department radio systems and carries enough gasoline to take it a considerable distance up the Connecticut River or to Long Island Sound, should the occasion arise.

The novel fire vehicle gives the swank summer colony town five fire trucks. Last summer they installed an "unfire like" innovation. Two tiny nozzles were mounted on the bow and connected to a small water tank.

When the volunteer firemen went on dress parade, well-directed squirts of water came out each side. More than one spectator caught a stream of water around the ankles.

But the practical side of the amphibious fire truck has been demonstrated along the riverfront, too. According to Chief Downing, it has already knocked down fires which were almost inaccessible from land.

Not too long ago the "duck" pumped a river barge dry after a serious leak de-

(*Continued on page 326*)

From top to bottom

Photos by John A. Cox

Wheel suspension arrangement makes the Essex Volunteer Fire Department's "duck" adaptable to rough terrain. Despite eight-ton weight, it can do up to 60 miles an hour on land and 10 knots in the water.

The Essex Fire Department's fireboat glides through the water in the town's marina. Powerful engine will speed it up to 10 knots and craft carries enough gasoline to take it a considerable distance up or down stream.

Launching the amphibious fireboat involves nothing more than a shallow bank from which it is driven into the Connecticut River. By throwing a single lever the craft converts from either four- or six-wheel drive to a single three-bladed propeller for power.

Left: A proud moment for these New Yorkers at the Queens dedication ceremonies. Left to right are Colonel Edwin L. White, FCC; John Silver, Vice-President in Charge of Operations, Motorola; Fire Commissioner Jacob Grumet, New York City, and Deputy Chief Thomas O'Brien, in charge of the Bureau of Fire Alarm.

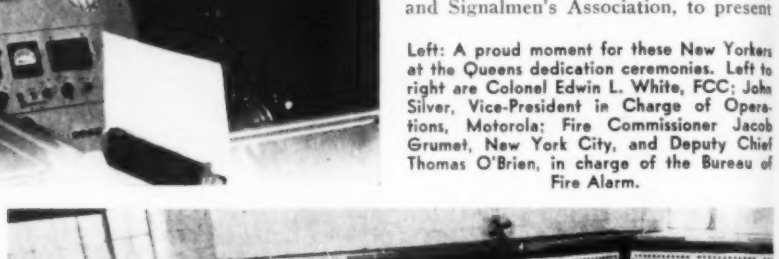
New York Now 100% Radio

The largest city in the world, with the largest fire department in the world, is now 100 per cent radio equipped. The department's city-wide, two-way radio system was formerly dedicated March 2nd in an impressive ceremony at the Queens Borough Fire Alarm Central Office by Fire Commissioner Jacob Grumet, Mayor Vincent R. Impellitteri, Col. Edwin C. White of the Federal Communications Commission, and representatives of the metropolitan fire force, and the radio manufacturer, Motorola.

As Fire Engineering's representative listened to the impassioned recital of accomplishments of this $600,000 innovation he was reminded of early 1942, and a little room on an upper floor of the old fire alarm bureau building at 159 East 67th Street, Manhattan. Two members of the New York Fire Department were in that room, entirely surrounded by radio gear and gadgets of every conceivable description.

Those men were firemen Sam Harmatuck and Arthur Meyerson. They were there by virtue, first, of the fact that they were complete and avid "radio bugs"; secondly, because the City of New York, having learned first hand of the damaging results of failure of communications during London's blitz had said in effect to these two, go ahead and show us if you can produce a "walkie-talkie" that will work.

In those days, hardly an officer of the great city's fire department had any faith that two-way radio would ever find its way into every Borough and every fire company. Even when New York's fiery little Mayor LaGuardia joined with representatives of the International Association of Fire Chiefs, and Signalmen's Association, to present



Interior of Borough of Queens Central Fire Alarm Office. New York City's new fire radio system was formally dedicated in this modern headquarters last February. View of interior shows radio control console center and local control emergency transmitter on table at left.

Left: Testing the new New York Fire Department's two-way radio system outside the Queens Borough Fire Alarm Central Office following acceptance ceremonies. Left to right are Fireman Willard Krauss with a "Handie Talkie" FM radiophone unit; Colonel Edwin L. White, Federal Communications Commission; Fireman Herbert Schubert at wheel of department's latest type pumper; Fire Chief Peter Loftus with vehicle's two-way unit, and John F. Oakley, aide to Chief Loftus.

the case for fire service radio before the F. C. C., the skeptics said that radio may be all right for smaller cities, but it'll never do for the biggest fire department in the world; New York's just too big. All of which makes the city's new radio system of more than passing moment. Actually, it convincingly writes off all the old prejudices and beliefs and announces to the world, and to this nation's fire service—we are living in a new age of fire service communications; let the dead past bury its dead. Where do we go from here!

Much that already been said about New York's new radio system; much

will be said about it as its attributes become better known. It can be said here, however, that the system formally accepted last February was not picked out of thin air. It was developed bit by bit, phase by phase, almost from the day that one Thomas Patrick O'Brien, was made a Deputy Chief and assigned to the command of the Bureau of Fire Alarm Telegraph. It came about because he sold top brass on its possibilities, and because he surrounded himself with men: Assistant Chief Engineer Wm. Hennessy, Sam Harmatuck (since made a Lieutenant) Nick Reinhardt, Anthony Neumann and others who made the extensive studies to determine the type system best suited to the city's highly complicated needs. As a result of these studies, covering two years of trial and error, the specifications for the revolutionary system were finally drawn up and bids received. The contract for $586,000 was awarded to the Motorola Co., Inc. Over 520 mobile two-way radio units were supplied, plus 75 station receivers, 8 base stations and 6 control consoles. Under the new network, all the departments 500-odd vehicles and mobile apparatus throughout the city, including eleven fire boats, are two-way radio equipped.

The new FM two-way system is designed to include city-wide communications as well as separate sub-systems for the five boroughs. It operates on eight channels granted the fire department by the F.C.C. whose cooperation, incidentally merits special mention, according to Chief O'Brien's office. Three pairs of channels are assigned to the three sub-systems—Manhattan and the Bronx, Brooklyn and Queens, and Richmond—while a fourth pair of channels is used by the city-wide system.

Already its application has demonstrated its efficiency in furthering fire control operations; already it has converted even the most skeptical doubters; already it is taking hold and becoming the strong right arm of the great city's great fire service.

Fire Razes Vacant R.R. Building

On January 24 last fire, of unknown origin, destroyed a vacant building, erected in 1887 as offices of the Colorado Midland Railroad which gave up the ghost about 1919, the building with yards being taken over by the Midland Terminal Railroad, which in turn was given up in February 1949.

About 9:15 P.M. a police cruiser reported the structure on fire. As it is located outside the Colorado Springs, Colo., city limits, but one engine company was dispatched. When the assistant chief arrived he found the building completely involved — threatening another structure only 20 feet away and acres of long grass and brush in the area.

Help was asked for and the County Fire Truck responded and put its booster tank to work. The water supply was poor, the nearest hydrant being a long distance away, 1,050 feet of 2½-inch hose being required to reach the fire. This hydrant was on a long dead-end 3-inch main and flow was poor. A pumper at the hydrant could do little to augment the flow and a ½-inch tip gave a poor stream.

A second engine company was called and this laid out 23 sections of 2½-inch hose, from another hydrant, to the fire. This line gave a good stream of water, which served to check the spread of the blaze.

For the most part, the fire was allowed to burn itself out, all efforts being centered on preventing extension, which was successfully accomplished.

The picture shows the structure at the height of the blaze. It was taken by contributor Lester L. Williams, M.D., of Colorado Springs, whose hobby is the fire service, particularly historic incunabula.

Mutual Aid Plan for Western North Carolina

George M. Bartlett, chief of the Spruce Pine (N. C.) Fire Department, has been appointed to a committee to work out plans for securing better cooperation among the fire departments of various Western North Carolina communities. Mack Salley, fire chief of Enka, heads the committee, which includes Bartlett, Red Gyams of Bryson City, Dan Merrill of Brevard and Bert Arledge of Tryon.

For several years it has been the practice, when any community in this area has a bad fire, for other communities to send men and equipment when requested. The new system will provide that when fire equipment of any community is depleted by a call, the nearest available unit will "cover" during its absence.

The new arrangement will require that all calls for help must come through official channels, either from the fire chief or the mayor of the community involved.

D. G. SPENCER.

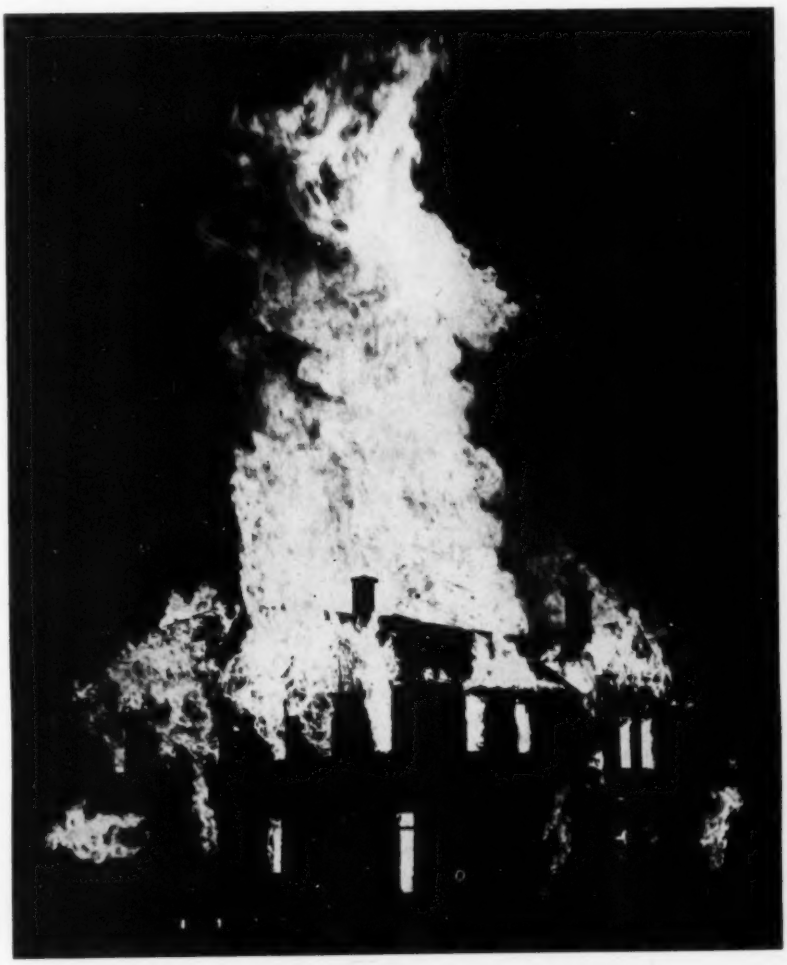
Gasoline Operated Wall-Paper Remover Is Hazard

Fortunately, there are not many of them in wide use, but the gasoline operated, steam wallpaper remover is considered a hazard by some fire fighters.

Latest evidence comes by way of Troy, N. Y., where a five-year-old Watervliet girl suffered facial burns when such a device exploded in the kitchen of her parents' home. She was not seriously injured, but the house was damaged by the resulting fire.

The girl's father and his brother-in-law were using the equipment to remove wallpaper, when the explosion and flash fire occurred. Two other children, aged three and one and a half, were in the kitchen at the time but were carried to safety.

Firemen confined the fire to the kitchen of the second floor.



Vacant railroad building near Colorado Springs at height of fire.

Tobacco barn with fire so far advanced upon arrival of fire department that structure was a total loss.

County Department "Sells" Service

Scott County, Kentucky, lies in the northwestern part of the state, about 45 miles from the Ohio River and Covington. Its largest city, and the county seat, is Georgetown, which is about 20 miles east of Frankfort, the capitol of the state.

It is a rural county; communities are few, and until recently there has been only the most limited sort of fire protection for these rural areas. If county-wide protection were to be maintained, it is reported it would require at least three fire stations with men and equipment, and the county government couldn't quite justify such organization.

Rural Department Organized

For some four years Richard H. Wall, among others, was convinced that the county ought to have better protection, but efforts to create any sort of public fire department were unavailing and prospects for fire protection were pretty dim. Then Wall decided to go about it another way. That was to organize a rural fire department and sell it on a more or less contractural basis to county customers.

This was done and the Scott County Fire Department came into being, with headquarters on Route 2, Georgetown, and with Richard H. Wall, chief.

Membership rates in this department, or for the protection provided, are: for the first year only, $10 for the first building; two to five buildings, $20 and 6 to 10 buildings $30.00. Each year thereafter, the rates are one-half the foregoing, respectively.

One of the first obstacles encountered by the new fire department was the sort of citizen who wouldn't join up, but would be one of the first to call for help in time of fire. To overcome this lack of cooperation, the department took a rather drastic step. It set up a "non-member" fee. If a non-member calls for help, the department responds, but upon the arrival of the apparatus the customer must sign a form which guarantees the fire department $100.00 for the use of the equipment, plus $3.00 per hour per man, not exceeding six men, which must be paid upon demand.

This agreement must be signed before any attempt is made to extinguish the fire, regardless of its size. According to Chief Wall, the department was forced to resort to this step as a result of one of the first fires the organization encountered. This fire was on the property of a judge of a neighboring county, and the fire fighters saved the judge's home and tobacco stripping room, close to a barn that was involved and beyond control before the fire was discovered.

The judge was not a member and did not actually call for the apparatus; nevertheless he was very glad to see the firemen come and save his house. Legally, he was not obligated to pay anything for the protection he received, and he did not. Thereupon the department decided to provide for such contingencies so they would not occur again.

The result has been that although the department has had six non-member fires since that incident, and although the property owners didn't like the bill, they had to pay it, nevertheless. Chief Wall says about this arrangement: "We feel that if people can't see the value of becoming a member at these fees, then it is not fair to give those who do not belong any free fire protection. It seems that people are always glad to call for help but they don't like to help bear the costs of apparatus and equipment."

Paid Driver Maintained

Under the arrangement, the department, which covers an area of about 10 miles in all directions, is able to maintain a paid driver on duty at all times, and according to the chief, the members feel they now have one of the best equipped rural fire departments in the area.

Although progress has been made, the primary problem facing the department continues to be the need of demonstrating to the rural folk of the area that the fire protection facilities are a good investment.

On the morning of Dec. 30, last, there occurred an incident which furnished added proof that such is the case. At 9:00 A.M. that morning the department received a call from the occupants of a house located about 8 miles from the station, telling that the roof of the house was on fire. When the equipment arrived a few minutes later, the building appeared doomed to the firemen as well as to the large crowd that had collected, drawn by the smoke.

However, fast work by the firemen demonstrated that maybe there was something to the idea of contracting-for-fire-protection after all. All the furniture was removed, while the fire was being fought, and damage was held to the minimum. After the fire was out, the chief stood on the porch and invited those who desired to do so to walk in and see the "stop"—and the absence of water damage. As a result of this incident the fire department now has almost 100 per cent membership in this particular little community of 100 people.

But the end was not yet. No sooner had the tired fire fighters returned to their station from this incident than the phone rang again with a call from one of the members located about 7 miles distance. The department rolled promptly, but this fire had progressed beyond any hope of saving the structure involved, and all the men could do was watch exposures and take pictures. The fire started in the stripping room at the far end of a barn over 225 feet in length, situated on a hill.

The fire was believed caused by an un-attended, overheated coke stove, which got red hot from the gusty wind and ignited nearby combustibles. The barn contained about $6,000 worth of tobacco and the fire was discovered by one of the hands who was putting race horse mares in their stalls at the near end of the structure. A few minutes later, there would have been 40 mares in their stalls and instead of a $28,000 loss, the owner reported the loss would have been $400,000.

Alarm Delayed

Being rather a large farm, one of the employes had to run a quarter of a mile to reach a telephone. Workmen in another barn on the property saw smoke an hour before the fire broke out but thought men were working in the large barn and did not know the men had left for dinner and had not returned. Damage to the house which was exposed to the fire amounted to $2,500. Needless to say the owner was happy to pay his "fee."

According to Chief Wall the department responded to 17 calls in three months during November, December and January. On the last call, the final week of January, the department was able to save four houses out of six in a row of flimsily built negro structures.

ATOMIC BLAST DISINTEGRATES HOUSE IN LESS THAN THREE SECONDS (→)

Complete destruction of Test House No. 1 at the Atomic test site, Nevada, on March 20, is shown in the picture sequence on the page opposite. Pictures taken by a specially-installed automatic Mitchell 35-MM motion picture camera, placed just 60 feet from the doomed house. Completely enclosed in a two-inch lead sheath, the camera rolled at a speed of 24 frames per second, and recorded this sequence in two and one-third seconds, with the blast and luminous gases therefrom providing the only source of illumination.

(1) Upon instant of detonation the test house, located some 3,500 feet from "ground zero," is bathed in atomic light from the blast. Structure remains intact.

(2) House is almost instantly set aflame by the intense heat.

(3) Shock waves extinguish most of the flames (top) and the house begins to disintegrate (bottom).

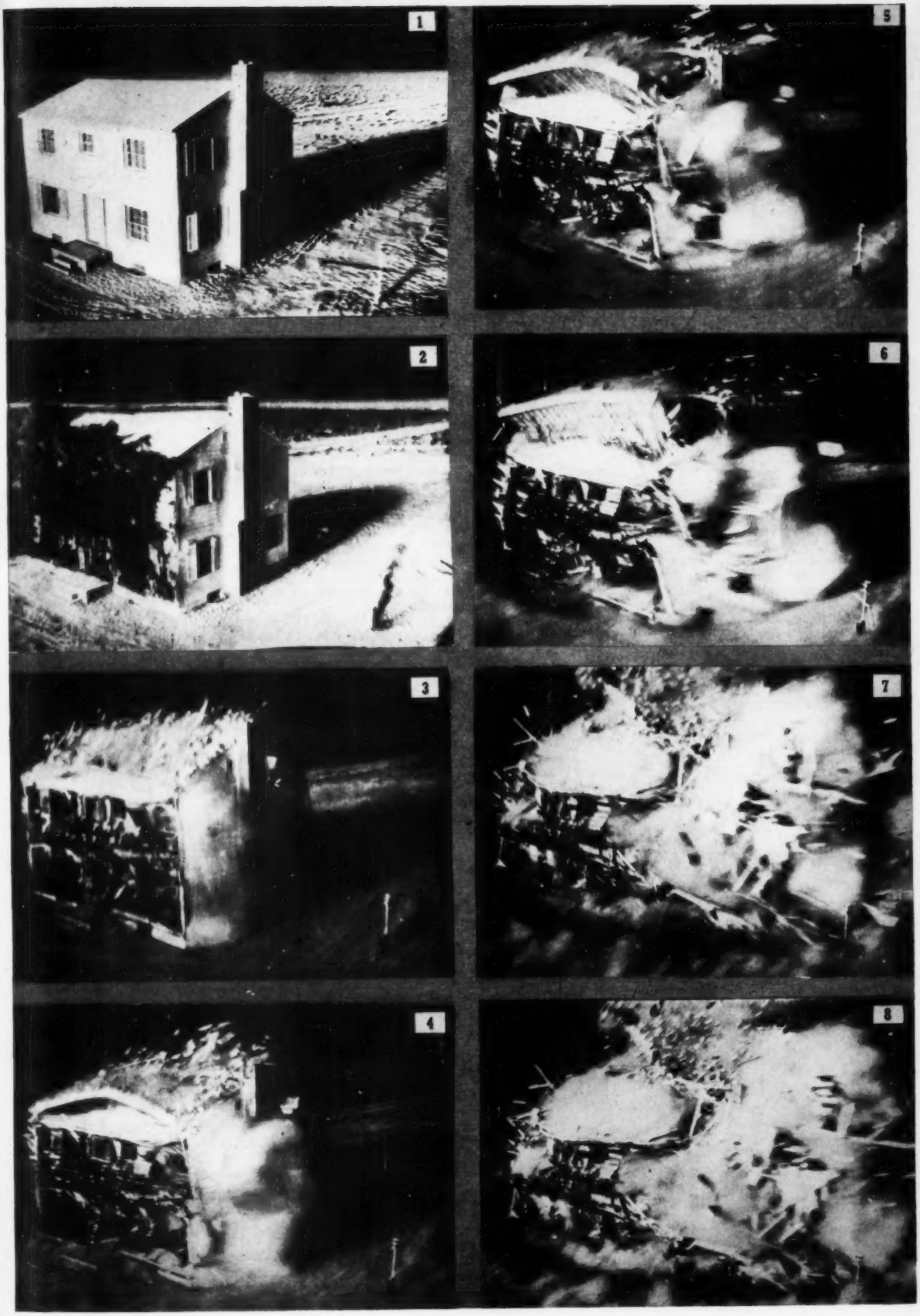
(4) House continues to disintegrate as the fire is literally blown out of it. Note roof begins to rise.

(5) Roof continues to rise as interior destruction continues.

(6) Roof disintegrates as house continues to blow apart.

(7) Roof and upper area in splinters with pronounced lateral thrust of explosion.

(8) Total disintegration, the frame work and contents literally shredded to bits and scattered in every direction.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News of the Manufacturers

Jet-Propelled Fireboat

Jet propulsion is not new, but its introduction to the field of marine fire fighting dates from World War II, and the adoption by the Coast Guard of the Hanley jet-propelled craft having capacities of 2,000 GPM.

Many marine fire fighters who used, or had opportunity to watch the operation of these little boats, have wondered whatever happened to them, and why the idea of jet-powered small boats apparently was not carried further.

The answer to this question is found in the announcement of Kermath Manufacturing Company, of Detroit, Mich., a subsidiary of Barium Steel Company, of the "Hydrojet" propulsion unit, which will take its bow at the Chicago National Boat Show in May.

Kermath, well known for its marine gasoline engines, in conjunction with Hanley Hydrojet, Inc., of Prospect, Ohio, has developed the revolutionary unit which has features which will be of interest to fire fighters.

Quoting Harold V. Bright, Kermath vice-president and general manager, "It is our opinion that from a fire protection standpoint, the future availability of boats with mechanical equipment to fight fires by pushing water through a standard fire hose at maximum velocity will be most interesting . . . there is a very definite application for small fire boats with the maneuverability to get under docks in large harbor developments where dock fires are so difficult to extinguish."

Briefly, the "Hydrojet" unit is a compact assembly, powered by a gasoline-driven engine, which propels and steers by jet application of water. The conventional propeller, drive shaft, clutch, reverse gear and rudder, have been eliminated, the only projection below the hull being the small jet nozzle which discharges water under pressure to propel the boat.

"Hydrojet" propulsion reportedly means complete maneuverability; quick stopping, and turning; operation in extremely shallow water (even in debris and sand-laden waters), and with a simple auxiliary take-off unit attached to the pumping device it can supply high volume stream for fire fighting.

First commercial units are expected ready by May 15.

George H. Blinn, Jr. William G. Flaherty Frank J. Slyva

Gamewell Announces Changes

The Gamewell Company, of Newton Upper Falls, Mass., has announced the following changes in personnel:

George H. Blinn, Jr., has been named Sales Promotion and Advertising Manager. Prior to his appointment by Gamewell, Mr. Blinn was Assistant Sales Promotion and Advertising Manager for the Hartford Accident and Indemnity Company, Hartford, Connecticut. He attended Boston University and Burdett College, and is a veteran of World War II, having served with the U. S. Army Combat Engineers from 1941 to 1945.

William G. Flaherty has been named Production Manager. Until his appointment by Gamewell, Mr. Flaherty was a Staff Industrial Engineer for the Strong-Narovec Company, Management Consultants, Cleveland, Ohio. Prior to this he was Senior Standards Engineer for Fenwal, Inc., Ashland, Massachusetts. He attended Northeastern University and Boston University and is a veteran of World War II, having served in the U. S. Navy.

Frank J. Slyva has been appointed to the position of Personnel Director. Mr. Slyva comes to Gamewell from the Elm Farm Foods Company, Boston, Massachusetts, where he was for many years Director of Personnel. Prior to this, Mr. Slyva was Director of Training and Safety for the Bendix Aviation Corp., Brooklyn, New York, and Norwood, Massachusetts. He also taught Personnel Management and Organization as a member of the faculty of Northeastern University. His background covers labor relations, organization development and training, employment and safety programs. Mr. Slyva attended Massachusetts Institute of Technology and Massachusetts Department of Education, and is a veteran of World War II, having served in the U. S. Navy.

New Line of Kidde Extinguishers

A new line of portable carbon dioxide fire extinguishers has been announced by the Fyre-Freez Division of Walter Kidde & Company Inc. Known as Fyre-Freez, the new portables feature squeeze-type valves and come in five sizes—2½, 5, 10, 15, and 20 pound models. They are available nationally through Kidde distributors and jobbers.

This 10-pound carbon dioxide Fyre-Freez unit is typical of the extinguishers featured in Kidde's new line of portables which employ squeeze-type valves.

The new portables use Kidde lightweight cylinders and the squeeze-type valve requires only normal hand pressure to actuate the extinguisher after the safety pin has been removed. To recharge, it is only necessary to squeeze the valve open to permit the recharge gas to enter the cylinder.

Fyre-Freez extinguishers have been approved by Underwriters' Laboratories and the Factory Mutual Laboratory.

Over 1000 gpm of water can be delivered by the 125 hp Hanley-Kermath Hydrojet unit in this 26-foot boat. The Hydrojet unit is manufactured by Kermath Manufacturing Company of Detroit, Mich., an affiliate of Barium Steel Corporation.

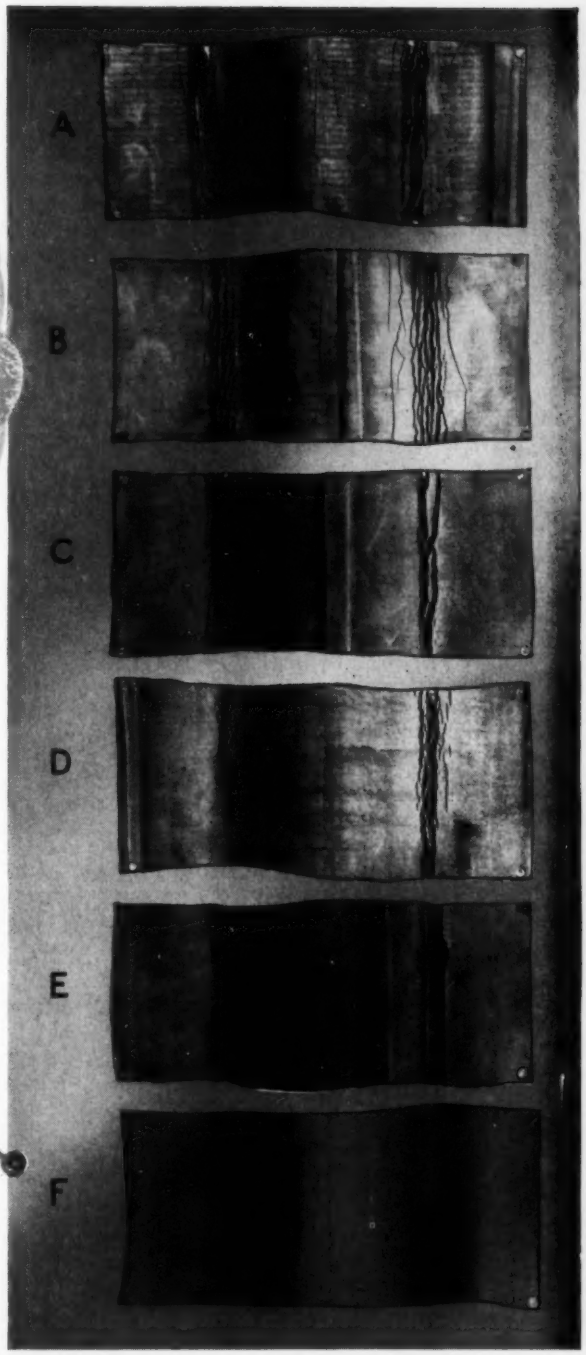
A Correction

In the January, 1953, issue of FIRE ENGINEERING, under the heading "Brazil Foam Extinguisher Gets Approval," the statement was made that Fabrica "Contra" Limitada, of Sao Paulo, Brazil, were the "only manufacturers of fire extinguishers of that nation."

It is since learned on good authority that FIRE ENGINEERING's item was in

BOMB TESTED

FOR LONGER WEAR



The rubber lining in a length of Eureka Fire Hose is subjected to the Oxygen Bomb Test to make sure that it has the required endurance, to resist heat, pressure and other service conditions. This lining is one reason why Eureka remains resilient, uncracked and smooth, and why it gives longer, more efficient service.

Results of Oxygen Bomb Test

Shown at the right are samples of fire hose of other makes and a length of Eureka (sample F) which was selected from stock. All were subjected to the same Bomb Test. Note how samples A, B, C, D and E have become brittle and cracked, while the sample of Eureka Hose, F, is still smooth, resilient and uncracked—visible proof of Eureka's long-life qualities!

Other Eureka advantages include the unique Smooth-Interior Filler Ply for maximum nozzle pressure, Mildew Proofing with "Formula X", Balanced Weave and Controlled Curing to eliminate excessive warping and stretching.

EUREKA

"For greater protection to life and property"

EUREKA FIRE HOSE

Since 1875, Specialists in Manufacturing Circular-Woven Cotton Rubber-Lined Fire Hose

195 Hudson Street • New York 13, N. Y.

Division of United States Rubber Company

Oren Ladders and Pumpers for Dallas

The first of a multiple order of five Oren Model 1600 fire apparatus units has been delivered to the City of Dallas, Tex. This is a City Service Ladder truck—one of three on order. The remaining two units are 750 GPM pumpers. All are powered with Waukeshaw 240 H.P. "Fire Special Engines." Similar models have recently been delivered to Jamestown and Pawling, N. Y.; Holyoke, Mass.; Portsmouth, R. I.; Miry Brook, Conn.; Ellicott City, Md., and Roanoke, Va. Special features include synchromesh transmissions and heat treated chrome manganese steel frames.

error and that there are in Brazil several fire extinguisher plants which manufacture foam, soda acid and vaporizing liquid extinguishers. Further, the Walter Kidde S/A, subsidiary of Walter Kidde & Co., Inc., of this country assembles CO_2 and dry chemical extinguishers in that country, some of the parts being manufactured in Brazil.

Novel Unit Protected Against Frigid Weather

Latest in all-weather fire apparatus is this radical design fire truck, a product of the Fire Fighter Truck Company, 3148 Fifth Ave., Rock Island, Ill.

As pictured, it features (1) a completely covered and heated front mount pump; (2) similarly covered and heated booster hose reels, all on a fully equipped fire pumper.

In the unit, the motor exhaust is trapped and brought through the hood and the pump, which "can never freeze or frost up" while the motor of the truck is operating. The front mount pump is a 300 GPM Hi-Low Pressure Champion Fire Fighter unit which can build up pressure to 1,000 PSI. The particular truck illustrated carries a 1250 water tank; with this and its other equipment this apparatus is armed to combat any type fire (discharge is available cruising or stationary).

The hood is removable for summer operations; by simply removing four bolts the hood can be stored. In addition to affording working temperatures regardless of frigid weather, the hood gives additional accident protection.

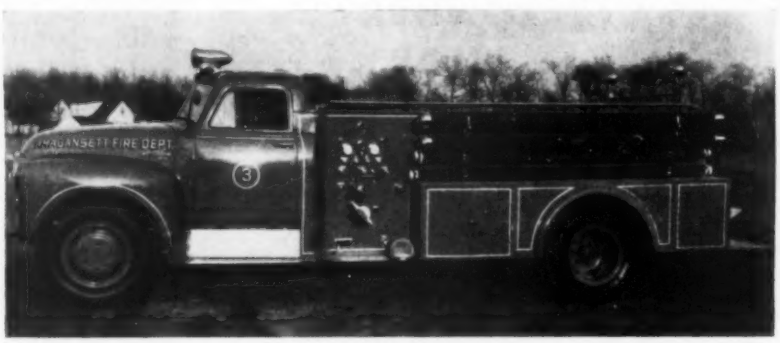
Unit has passed Underwriter's tests (including operation at 15 deg. above zero). The company also manufactures 500 GPM front mount pumps that build up between 400 and 500 PSI pressure.

Hood in place over front mounted pump.

"Approved" Presents "The Captain Line" for Suburban Service

Approved Fire Equipment Co., Rockville Center, New York, has introduced the "Captain" line of triple combination pumpers for suburban service.

The Captain is built in three models: A—500 GPM, two-stage centrifugal; B—500 GPM, single stage centrifugal, and C—200 GPM rotary pumper.



"Captain" 500 gpm pumper.

They come with either full cab, semi-cab, or open driver's seat, as desired, with a variety of standard chassis to select from. Specifications include Hale pump; dual cooling system; equipment to discharge water or fog; booster service and tank protection against freezing; #12 gauge steel bodies; compartments the entire width of body; steel running boards and fenders; valved outlet for filling Indian tanks; electric fixtures, and the usual pumper miscellaneous equipment.

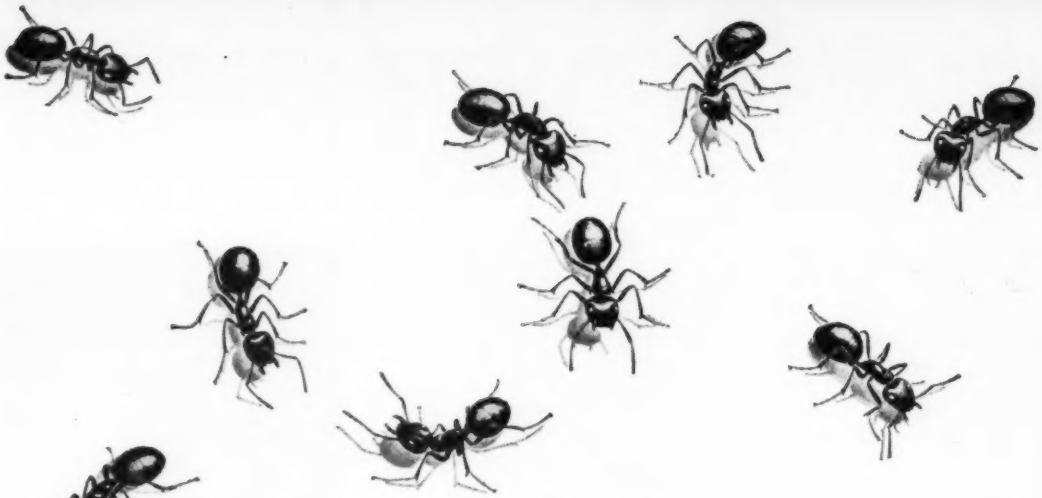
Radio Controls Air Raid Sirens

Civil Defense authorities of Franklin County, Ohio, including the city of Columbus, have installed a system to automatically sound 56 air raid sirens throughout the county, by a novel combination of radio and wirelines.

Control of the system is maintained in the Columbus Fire Department radio headquarters, where an operator is on duty at all times. He can control the 56 air raid sirens simultaneously by means of two pushbuttons, one for the "alert" and one for the "all-clear." An alert for sounding of the county's air raid sirens will come directly to the Fire Department headquarters by means of the Federal Civil Defense alerting network.

Recent tests of the radio and wireline alerting system have proven highly successful, according to General Electric, which supplied the special electronic tone and equipment for the system, and Franklin County Civil Defense officials.

(*Continued on page* 339)



Give fire half a chance and like a swarm of ants it will over-run a thriving business. It must be stamped out anywhere it shows itself. In the paint locker, power plant, garage. That calls for a battery of strategically placed KIDDE Portable Fire Extinguishers.

Get the ants out of your plants.
Call your KIDDE dealer today.

Kidde

Walter Kidde & Company, Inc.,

433 Main Street, Belleville 9, N. J.

Walter Kidde & Company of Canada, Ltd., Montreal, P. Q.

New Fireboats for Coast

The latest in the long line of Alden-designed diesel-powered fire boats is under construction for the City of Long Beach, Cal.

It is reported that for its size, this fireboat will deliver the largest output of water per dollar of investment of any existing fireboat in the country.

The principal specifications of these new boats are: Length, overall, 58'-5½"; beam over guards, 17'-2½"; draft, 5'-10"; construction of hull and house, welded steel.

Two dual purpose General Motors Series 6-110 diesel engines serve for propulsion, as well as to drive, through Rockford clutches, two 2250 GPM bronze DeLaval two-stage fire pumps for a total pumping capacity of 4500 GPM at 150 PSI

The major fire fighting components of these boats are: two 2000 GPM monitors, one fitted with a foam adaptor, twelve 2½-inch hose outlets, four fitted to foam system. All hose outlets have individual Barton pressurators and Hale quick-acting shut-off valves. Two turntable Wirt & Knox hose reels, each with a capacity of 1000 feet of 2½-inch fire hose, are located on the after deck providing compact, yet easily accessible hose stowage.

All controls for speed of boat and output of pumps can be made from the pilot house.

In addition to the high water output, these boats can produce, from 500 gallons of 3% foam concentrate, 160,000 cubic feet of foam for fire fighting in twenty-three minutes through the use of a simple foam proportioner installation. The closing of an isolation valve allows the foam system to operate through the forward four hose outlets and one monitor, concurrently with water output through the aft eight hose outlets and one monitor.

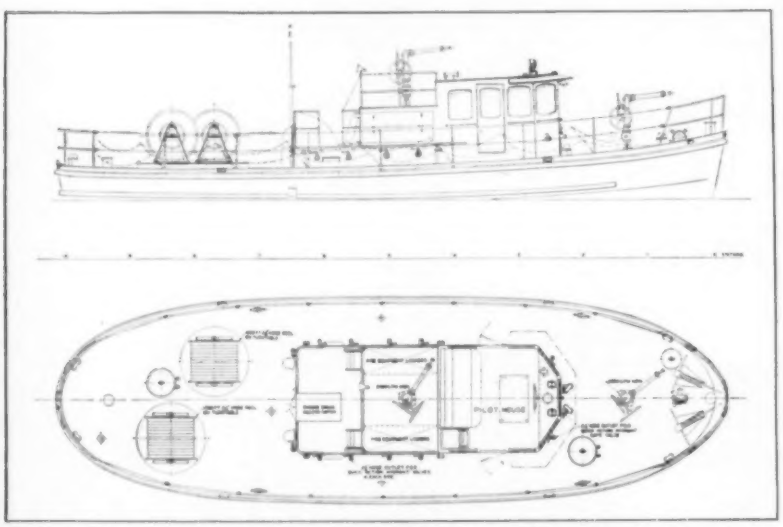
Williams-Hager spring check valves are installed on the suction side of each pump for the purpose of maintaining a prime at all times, regardless of any trim condition of the boat. A secondary emergency priming system is also provided together with a special fresh water flushing system.

The ship service fire fighting is composed of four 50 lb. CO-2 bottles, two of which lead to the fuel tank compartment and have automatic control. The remaining two bottles are piped to a portable manual CO-2 horn with an extension hose.

Electrical installation consists of a U. S. Motors 3KW, 115-volt A. C., single phase marine diesel generator set for ship service when away from the dock and a shore connection for 115 volts when at the dock. The switchboard includes a transfer switch for shunting the power from the shore line to the ship's generator.

No living quarters are provided for on these two boats. A portable transom berth is fitted in the deckhouse for emergency use, and a toilet is installed in the engine room. All other crew living facilities are ashore.

One of two Alden fireboats being built for the City of Long Beach, Cal. Two more, somewhat larger, are being designed for San Francisco Harbor.



Outboard profile and deck plan of the 4500 GPM diesel fireboat for the City of Long Beach, Cal.

Flames Level Old Church

Fire leveled St. John's Catholic Church at Cromwell, Conn., on March 1, causing damage estimated at approximately $175,000. The flames, which broke through the rear of the structure before they were discovered at 4:30 A.M., resisted all efforts of firemen from four nearby towns.

Fire destroyed the 72-year-old St. John's R. C. Church in Cromwell, Conn., on March 1, causing damage estimated at $175,000. Fire fighters from four Connecticut departments aided in combating the flames.

A barking dog gave the first warning of the fire. Edward Dombrowski, of 3 Lincoln Street, whose home is about 50 yards from the church, was awakened by his springer spaniel. Dombrowski called the Cromwell Fire Department, and then ran to the church rectory and woke the pastor, the Rev. Thomas M. Lane.

When firefighters arrived under command of Fire Chief Clarence Stetson, they broke through the front doors, but dense smoke and flames drove them back. The fire had already filled the interior and swept up into the tall steeple.

Chief Stetson summoned aid from the nearby departments at Middletown, Portland and East Berlin. Flames ate through the roof and the steeple fell, section by section, into the interior of the church.

St. John's parish was founded in 1880 and parishioners were making plans for the 75th anniversary celebration in 1955.

TOM MAGNER.

New Fire-Safety Group Formed

Formation of a fire protection and safety research group—the first service of this type especially for Midwest industry—was announced recently at Armour Research Foundation of Illinois Institute of Technology.

Head of the group will be John J. Ahern, director of Illinois Tech's department of fire protection and safety engineering.

William A. Casler, assistant director of research at the Foundation, explained that companies sponsoring fire protection and safety research at the Foundation will have one or more of these objectives:

1. To prevent fire or explosions from starting; 2. To limit the spread of fire after it has started; 3. To provide for prompt detection of fires; 4. To provide for prompt extinguishment; and 5. To prevent accidents.

Four more western communities choose

MEDICAL LAKE, WASH.

ASTORIA, ORE.

JOLIET, MONTANA

HELENA, MONTANA

Choose the Added Protection of Extra Traction to protect your community

Throughout the nation, the trend is to FWD Fire Engines. In both rural and urban communities, crews know they can depend on four-wheel-drive traction to help save time on every run. FWD provides maximum safety for crews, equipment *and* other vehicles. FWD equipment and accessories also deliver extra action and dependability at the blaze.

Write for the new book—"FWD Fire Engines." It pictures and describes the types of FWD equipment selected by many typical progressive communities. Helps you select equipment for your specific needs.

THIS IS WHY YOU NEED FWD EXTRA-TRACTION

SAFER CONTROL IN TRAFFIC — Start faster. Positive control permits greater speed. Avoid accidents because 4-wheel-drive assures superior steering.

REACH OUT-OF-THE-WAY PLACES — Get through to water supply in hard-to-reach sections. Drive over terrain that stops the conventional fire truck.

FULL CONTROL ON SNOW AND ICE — With front wheels pulling and back wheels pushing—drive swiftly, safely over icy or snow-blocked streets and roads.

STEEP GRADES, MUD, SAND NO OBSTACLE — Drive hub deep through sand or mud. Pull up steep, slippery grades without losing speed. Save valuable time.

Built by the Makers of America's Foremost Heavy-Duty Trucks

THE FOUR WHEEL DRIVE AUTO CO., CLINTONVILLE, WIS., *Canadian Factory:* KITCHENER, ONT.

FALSE ALARMS

"As an impartial judge, wouldn't you say this is just the suit for him?"

On the Sly

First wife—"Does your husband still find you entertaining?"

Second wife—"Not if I can help it."

Truck Mechanic: "I wasn't drunk, your honor; just drinking."

City Judge: "Oh, that's different. In that case I'm not going to send you to jail for a month, but only for 30 days."

She wed him for life, and later discovered he didn't have any.

Mama: "I'm so glad to see you sitting so quiet while your father naps."

Junior: "I'm watching his cigarette burn down to his fingers."

Precaution

A tall, gaunt-looking person recently entered a hotel in a town where several fires had occurred and applied for a room at a price which entitled him to lodging on the top floor of the house. Among his belongings the proprietor noticed a coil of rope, and asked what it was for.

"That's a fire escape," said the man, "I carry one with me so I can let myself down from the window without troubling anyone."

"Good plan," said the landlord, "but guests with fire escapes like that pay in advance at this hotel."

Convict: "How long are you in for?"

New Cellmate: "Ninety-nine years. How long you in for?"

Convict: "Seventy-five."

New Cellmate: "Then you take the bed nearest the door; you're getting out first."

A pedestrian came weaving down the street, obviously pretty well plastered. Finally, realizing that further progress was out of the question for the moment, he slithered to the curb where he sat dejectedly with head in hands.

Just then, along came a man from the city water department and putting a long iron wrench into a socket in the pavement, he began turning it to shut off the water supply valve.

The tipsy pedestrian regarded him wearily through blurred, blood-shot eyes. "Shee, here, Bud, if you jush got to turn this street aroun'," he muttered, "I wish you'd wait 'til I get home."

Forgot

The young plumber had proposed and had been accepted. Several hours later the couple parted and he went home.

At three o'clock the next morning a loud ringing of the front door bell of the girl's house was heard. Her father, roused from sleep, went to the window and, sticking out his head, inquired who was there.

"It's John," said the voice from below. "I asked Dorothy to marry me and she said she would, but I forgot to kiss her."

The engineering department is baffled by the fact that girls with the more streamlined figures seem to offer the most resistance.

Mother (examining toy). "Isn't this rather complicated for a small child?"

Clerk: "It's an educational toy designed to adjust a child to live in the world today; any way he puts it together it's wrong!"

Despite the scarcity and high prices of whiskey, a nickel drink of it is still available in the South—a recent autopsy shows.

"Aren't you a little late? The costume party was last night!"

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"FORCED AIR" SMOKE EXHAUSTER

PORTABLE — POWERFUL — SAFE

Weighs only 40 pounds

Wire guards each end

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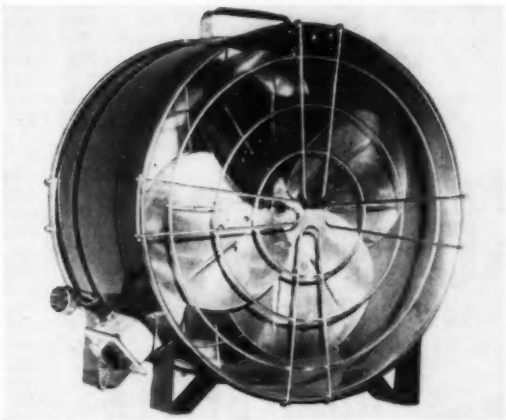

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The large volume and strong blast of air delivered by the "FORCED AIR" Portable Exhauster, together with its small size and light weight, makes of this unit a valuable addition to Rescue Squad Wagons, and all Fire Trucks for the purpose of expelling poisonous fumes, gases or smoke. It enables fire fighters to enter a building faster and more safely and stops much smoke damage. Being small and compact it can usually be carried on the running board of most fire trucks. Unit is sturdily constructed and will withstand hard usage.

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Smoke Exhausters

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PORTLAND 9, OREGON

Plant located at Cornelius, Oregon

"Big Little" Department

(*Continued from page 292*)

to be held in September, 1950, using the special facilities of the Stephens Drill Yard. Firemen from all over South Arkansas were thereupon brought together for five nights, where they studied in groups under various instructors. In these group studies they would get blackboard and class discussion, and in their turn would then work on the drill ground, actually trying out the theories they had discussed in class. In this first school the drill tower was needed for hose practices and ladder work, but the best results came when fires and smoke smudge were built in the special fire pots, filling the tower full of thick smoke and fire, and providing simulated rescue, ventilation and the use of all types of masks.

About this time there were many and varied ideas as to the danger of, and the method of handling and combatting fires caused by butane and propane, having a butane and propane refinery within just a few miles, with their transports constantly passing through the city's main business district. It was natural that the volunteers would be vitally interested in this training course. The refinery readily agreed to supply the gas needed for the regional school. With this gas and the "Christmas Tree," the men learned what to do if, in a transport wreck and a fire, the rupture or break was between the tank and a valve, or between the valve and the end of the outlet line. They also learned the advantages of a fog stream for this type of fire.

This one course in the Stephens school meant much to the firemen of South Arkansas for it convinced them that this particular type of fire rated their respect but not their fear. At these courses on the Drill Ground the trainees would try any method anyone thought would work. One attending fireman insisted he could control a butane fire under a 100 pound pressure leak with a 20# CO_2 Extinguisher. He would not be convinced until he had his try, but he soon found that the heat was too intense to get in close enough and his extinguisher would not last long enough nor would it cool the fire down enough to control the vaporization of the butane. This was and is the paramount interest and objective of this regional school, to show firemen what can be done and what cannot be done. Because of the Stephens training program and facilities, this department now serves as host each year to the South Arkansas Regional School. All this has been very gratifying, and stimulating to the local lads too. Another incident may serve to show the extent of this training efforts. At this time the idea of indirect application of fog was being talked of, but no one seemed to know too much about it. The "eager beavers" decided to see what we could do with it, using the frame drill tower. Some more fire pots were built with an overhead shield and the vamps then proceeded to see how hot a fire could be built in this building. The department learned some very pertinent facts, but members were a little embarassed when they had to call out both trucks and the "all hands" to save the tower. Result was that the lads were forced to spend several hours and some more donated materials in order to return the drill tower to usable condition, but it was done and now the tower is used nearly every week. It is an axiom that the department will use its facilities for trying out any method that might have merit and will help to improve fire fighting technique.

Training Pays Dividends

One example will attest the wisdom of having this special equipment and being trained for out-of-the-ordinary types of oil fires. On December 22, 1950, the department answered an alarm to Pan-American Refining Company's loading station, approximately three miles from the city. Upon arrival, none of the attendants could be found, but there was a truck pulling a 4000 gallon transport in the center of the loading area, and blazing furiously, and surrounded with tanks full of various oils. The cab and tires of the truck were burning, as well as the front end of the trailer. Firemen finally located the attendant, who was some 1000 feet away, apparently hiding behind a building, and learned from him that the trailer was fully loaded with wax distillate. Fire fighters moved in with two 1½" lines. One line was laid to the cab fire and charged, but the nozzle man was told to await orders before he opened the fog nozzle. The other line was laid in to the trailer, and a straight stream was played up and down the trailer tank until the men could see the vapor was falling. Then the order was given and both lines moved in on the fire with fog, and the fire was quickly extinguished. However, it took the addition of wet water to keep the tires on the rear dual wheels from re-flashing. The truck itself was about a 55% loss, but the 4000 gallon trailer and contents, as

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well as the loading racks and the supply tanks, were saved. The loss in dollars was $1200.00 and the savings of the trailer and contents was $6,000 plus the cost of the tanks and loading racks of the loading station. Only 420 gallons of the 700 gallons of water carried into this fire were used. It was the special equipment and the special training that affected this saving — with no men injured.

Department Has a Physician

On the subject of injured men, Stephens firemen proudly boast a department doctor. The city has only one physician, and he is called on to serve an entire area of at least 3500 to 4000 citizens, covering at least a 15-mile radius around Stephens. For this reason it is impossible for him to be an active fireman, although at heart he is a real blueshirt. The doctor has been made a lifetime Honorary Member; he is present at every fire, when possible, and at every function held either by the firemen or the auxilary. The few times firemen have been injured, they have been taken care of by the doctor, who has never accepted renumeration for this service. He says that is his duty as a member of the department.

The Stephens Fire Department has been fortunate in holding the fire losses in its city and the property around about to practically nothing, but the big test came on October 18, 1952, at 1:35 P.M., and endured until 11:18 P.M., November 1, 1952.

The Big Test

That was the time for the forest fires of Southwest Arkansas, which raged out of control of the forestry service. In this fifteen day period, Stephens firemen spent 75 hours of fire fighting time protecting rural property, including churches, homes, barns and highway bridges. During this period the department answered four alarms within the town, totaling 8 hours of actual fire fighting.

It should be borne in mind that not one member of the Stephens Fire Department is a paid man. Every member either has his own business or is working at some job. Those who owned their businesses were forced at times to lock their doors, while those working for others laid off from their job with the blessings of their employers. During this period the men answered seventeen calls for help, some as far away as 21 miles, being out from 2 hours to as high as 21 hours per call. They were successful in saving three churches, one combination school and church, seventeen farm houses and five county highway bridges. The number of barns and outbuildings saved were lost count of, as they were too numerous. The appraised valuation of all the property involved exceeded $200,000.00.

In addition to this, the men were instrumental in saving a great number of oil wells and tank batteries, as one part of the worst fire was in the midst of one of the largest oil fields in the area. These installations would have been destroyed had not Stephens volunteers headed off the fire before it reached this property. On one of the calls made to a home that was threatened, the building was protected but, while this was being done, the forest fire jumped over the

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fire force and raced on ahead. This forced firemen to race on to the next property; and so it went, the vamps seemingly staying just a jump ahead, sometime being a jump behind; so much so, that when they would get to the property, the roof of the barn or house would be aflre. This fire would be extinguished, then the tired volunteers would burn off around the property, and move on. This "rat race," as one called it, kept up for twenty-one hours.

The task of protecting this rural property and at the same time giving the city the proper protection was a problem. It called for dispatching a crew of men out of town and at the same time retaining enough force at home; it also meant knowing where all men on the department were, where they were working, what time they got off from work, or where the chief could contact them in case of an emergency. One phase of this problem was lack of water. One member of the department had a mill truck with a 500-gallon tank mounted which was pressed into service to shuttle water back and forth. Another citizen of the town owned a 1500 gallon oil transport, which he steamed out and turned over to the harrassed firefighters. It was equipped with a small rotary pump, which was used for unloading oil. This the men equipped with a 1½"-line of hose and used the rig for both hauling water and for fighting fire when they had more than one call.

The Junior Firemen, the group which the department organized and trained over the past three years, were also put to work during this period. They proved their worth. Since none of the fire equipment had radio, firemen were forced to solve the communication problem through the generous co-operation of the Arkansas Power & Light Co. All of their trucks are equipped with radio. Inasmuch as they maintain two trucks in Stephens, they readily agreed to let one of their trucks go out every time the vamps answered a rural alarm, permitting the other one to stay in town at the fire station. In this manner, when water or more men, relief men, or food were needed, the officer at the fire would radio to town.

The food was furnished by the firemen's wives. They have had an active Auxiliary ever since the department's reorganization and were prepared to go into action. Whenever meal time came and firemen were out of town the women would be there with food and hot coffee.

The citizens of Stephens all tried to help and worked with the auxiliary, proving that much can be accomplished through close co-operation.

This siege of forest fires again proved that Stephens training and study had been correct. It paid huge dividends, for without the "know-how" the men would not have known how to set backfires, and burn off around property. The only times firemen actually fought the woods fires was when it was necessary to prevent the fire from reaching some building. It was found that this was another place where a fire-setting agent paid off, because without it the men would have had a much larger job stopping fires in grass and leaves, as well as an old wooden shingle roofs. Many times men would wet down this type of roof to prevent its catching.

A final bit of evidence to attest training: on Sunday morning, February 1 at 10:58 A.M. firemen were called by the Cotton Belt Railroad for help where one of their freight trains had derailed, piled up 27 cars of freight, and caught fire. This was about five miles from Stephens and the closest point apparatus could get to the wreck was about one-quarter of a mile, where a country road crossed the railroad tracks. At this point the men got their truck across and astride the rails, and drove it down the right-of-way to the wreck, and on one side of a bridge across a creek. The 27 cars were piled up as many as four deep and within a distance of less than 300 feet.

The wrecked cars carried sulphuric acid, cottonseed oil, compressed bales of cotton, baled waste paper, coal, refrigerators, flour, miscellaneous freight and one empty gasoline tank car. The water in the creek was too far away to draft. Firemen sent back to town for a pump, which was set on the bank of the creek; the men threw up a dam, and then pumped the water into the booster tank of the pumper to supply two lines, which were operated on the fire. The wreck was on the main line, but there was a siding which the railroad could use to get their trains around the crash and not interrupt their service, providing the wreck could be kept cooled to prevent the passing cars from catching fire. This would also enable railroaders to go ahead with the work of clearing the wreckage. In order to render them this service, the department worked its men in six-hour shifts. Every member worked at least one six-hour shift. The department remained on the job from 11:00 A.M. Sunday morning until 5:00

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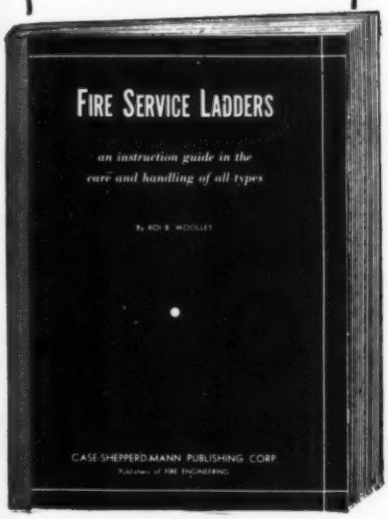

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AN INSTRUCTION GUIDE IN THE HANDLING AND CARE OF ALL TYPES

Here, at last, is an answer to the great many requests we have had from fire chiefs and fire department instructors the country over—a book embracing the highly popular series of articles on ladders that appeared in FIRE ENGINEERING between May, 1950, and October, 1952.

This is without question the most complete, practical and authoritative material ever made available to the fire service on every phase of ladder use, handling and care. It is not only brimful of instructive illustrations but *each operation is fully explained* in easy-to-understand detail. The author, Roi B. Woolley, who is Assistant Editor of FIRE ENGINEERING, a former fire chief and a nationally recognized authority on fire fighting, devoted many months of careful and thorough research in compiling and checking all the data.

Every fire chief, instructor and training school should have this book, and a copy certainly belongs in each fire station.

CONTENTS

Twenty-eight fact-packed Chapters dealing with every fundamental of fire service ladders, their design, use and maintenance. Here are some of the major subjects covered:

LADDER DEFINITIONS: Glossary of Terms and Terminology.

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P.M. Tuesday. Since by that time it was necessary to return to quarters with equipment and there was still some fire, the wrecking crews were fixed up with a fire line, with the small pump and 1¼" hose.

The wisdom of answering this alarm was not alone that the members of the department felt they had fulfilled an obligation, but there was a more substantial remuneration which will enable the department to purchase two Scott air packs which it has been wanting for a long time. It also resulted in the acquisition of lights on adjustable standards to be used with the portable light plant.

Such is the story of how the "Big Little Fire Department" secured its needed equipment, developed, surmounting all obstacles, for the protection of Stephens, facilities valued at over $30,000.00, and how this was done with the citizens of the city having to lay out only the original amount of $8,000.00, which was secured by the bond issue. In addition to this, the department has a fire station that could not be replaced today for less than $12,000.00, and an alarm system worth $1,000.00, acquired at no cost to citizens. But that isn't all. Maintained in the department treasury is approximately $1500.00, to be used to help out in case one or more Stephens firemen are injured. This will help, in addition to the men's insurance and pension, and relief fund payments.

The department personnel now consists of 14 of the original 17 men. Of the three men, one resigned because his work took him to another city; one resigned because of his working conditions; and one resigned because he was not a firemen. These men have been replaced and, to date, have completed over half of their training program. Chief Reveley sums it up like this: "the more we all work, train and study, the more we are made to realize we have no stopping place but must continually prepare ourselves to remain an effective fire department in order to keep our fire losses to the minimum."

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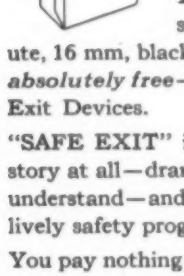
SAFE EXIT



You can do a fine educational job in behalf of safety by showing "SAFE EXIT," a 20-minute, 16 mm, black and white sound movie, prepared for you—*absolutely free*—by the makers of Von Duprin Fire and Panic Exit Devices.

"SAFE EXIT" is a true public service film—not a product story at all—dramatically filmed and edited for the layman to understand—and benefit by. Use this film as the basis for a lively safety program in your plant.

You pay nothing—not even postage—to show "SAFE EXIT" in your community. Simply fill out and mail the handy booking request below.

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YES, we wish to show the 16 mm, sound, B & W movie, "SAFE EXIT."

Date Desired: or (PLEASE LIST ALTERNATE)

Type of Audience: (SCHOOL, LUNCHEON CLUB, TRAINING, ETC.)

Expected Attendance

We understand film is absolutely rent-free, postage paid.
We agree to return film the day following our showing.

Organization

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Address

City State

Von Duprin PANIC DEVICES

Fire Service Rescue

(*Continued from page 294*)

portant that we know when *not* to give water.

Water is used:

a. In the general first aid treatment of shock.
b. Internally and externally in the first aid treatment of sunstroke.
c. In the first aid treatment of poisoning.
d. For irrigation of the eyes in chemical burns.
e. Externally for ammonia attacks.
f With salt, for heat exhaustion and heat cramps.
g. Externally, when there is an abdominal wound and an intestine is protruding.
h. For compresses for bleeding nose.
i. For cold compresses for sprains.
j. For snake bite and other cases.

The canteen should have not less than 1 gallon capacity, should be treated against rust and corrosion, and should have a label bearing the following in bold type:

CAUTION

Do not give water to an unconscious person.
Do not give water in case of abdominal wound.
Do not give water if nausea or vomiting occurs (poison cases excepted).
Do not give water if the patient is soon to reach a hospital and an operation is to be performed.
Drain and refill at least once each week.

Up to the present we have, for the most part, discussed equipment needed for the first aid treatment of victims of accident or sudden illness. We shall now consider the equipment necessary for rescue practices.

The cutting torch is an essential part of all rescue apparatus. Victims may be pinned in metal wreckage or confined in metal entrapments. As with other mechanical devices, rescue personnel should thoroughly study the directions and drill periodically to be proficient with the cutting torch.

The Navy pack-type oxy-acetylene emergency cutting outfit is ideal for rescue apparatus. The manual that accompanies this outfit is clearcut and comprehensive. The tanks and valves are encased in a fire resistive canvas container. If the acetylene tank is of the prest-o-lite type rather than acetylene, the outfit can be operated in a horizontal or prone position because no acetone is used in the prest-o-lite container. Because of the small size of the tanks this outfit is only good for a short period of cutting. The dispatcher or those in charge of procurement should be aware of the availability of larger outfits for emergencies, such as train wrecks or

street car wrecks or collapsed bridges or other structures. A set of spare tanks, manifold, and test gauge that come in a separate metal container should be supplied and carried in the apparatus.

Careful consideration should be given to each incident before cutting is commenced. The victim should be protected from heated metal and flying sparks. If there is spilled gasoline or other fire or explosion hazard, it may be better to attempt to remove the victim with jacks. Hand extinguishers or a charged line and an asbestos blanket should be kept at hand.

Only ferrous metals can be cut. A panel cutter, or metal cutter, should be carried on rescue apparatus for such metals as aluminum, copper, etc. Do not inhale the fumes when cutting any galvanized material. Such fumes are highly toxic. Always ignite the torch with the provided spark lighter; do not use a match. Ignite immediately after turning on the acetylene. Do not let the gas accumulate, particularly in a confined space. Make sure that your hose will not be burned by fire or molten metal.

Always wear leather gloves and goggles during cutting operations. Colored lenses should be provided for all daytime cutting. At night, unless plenty of light is provided with floodlights or other means, the use of dark lenses will cause inefficiency. For this reason an additional pair of clear lense goggles should be provided. With clear lense goggles, do not stare at the cutting flame for too long a period of time.

Test tanks with soap and water. A shaving mug and brush are ideal. Do not use grease, or or paraffin wax on any part.

Arson Investigation

(*Continued from page 297*)

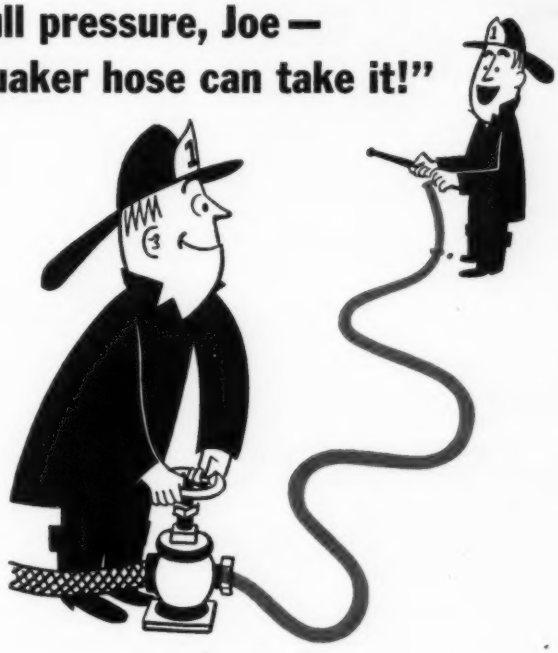
stimulants or the chemical qualities of the evidence found.

Care and Preservation of Evidence

The first step in this direction is the careful preservation of evidence found at the scene of the fire. Extreme care must be used in gathering the evidence and sending it to the chemist for test. As a precautionary measure, whenever such material is collected for a test, two or more persons should be present so they can later identify and testify to the fact that the material was taken from the scene of the fire. They must also be prepared to testify that the container, in which the material was placed, was at the time clean and free of any odors or contamination; that they were sealed in his presence at the time they were taken from the scene of the fire; that until it was placed in the hands of the chemist, no one had tampered with the evidence. A written signed receipt must be obtained from the chemist or official who receives such evidence, and this, too, should state that the containers were sealed and untampered with at the time they were delivered to the laboratories for test.

All evidence should be tagged and the nature of the evidence noted on such a tag in ink before the containers leave the scene of the fire. Where it is suspected that flammable liquids were used as a stimulant, water can be drained from the suspected site and placed in proper containers and turned over to the chemist who will be able by distil-

"Full pressure, Joe — Quaker hose can take it!"



Quaker

FIRE PROTECTION HOSE

High water pressures—extreme heat—rough handling? Quaker fire hose *stands up* under punishment! Tough cotton jackets, special tubes—they ignore terrific beatings! Easy-fold construction packs 3 feet of hose in truckbeds in space of 2—assures vital light-weight *extra footage* for high, hard-to-reach places. For extra security, top economy—specify Quaker!

Write for name of nearest distributor

Fire engine suction, chemical, booster, municipal fire and mill hose for every need.

QUAKER RUBBER CORPORATION
DIVISION OF H. K. PORTER COMPANY, INC.
OF PITTSBURGH
PHILADELPHIA 24, PA.
Branches in Principal Cities

Meet us at Eastern Chiefs Convention in New York May 20, 21, 22

No lubrication necessary
Carbon bearings (oilless)
2 Piston-finished stainless steel shafts
Bronze housing (Oberdorfer alloy No. 741)
Bronze spur gears (Oberdorfer alloy No. 16438)

the new

OBERDORFER BRONZE BOOSTER PUMPS

These booster pumps with oilless bearings will last 3 to 5 times longer than the old style equipped with plain bronze bearings. As a result of closer machining tolerances, over 20 feet of suction lift may be depended on.

The No. 13 and No. 26 Oberdorfer Pumps are more fool-proof than they have ever been. When you get to a fire you have something you can count on. It isn't necessary to wear pumps out checking them periodically to see if they will work. These pumps are metering pumps in principle and therefore must produce the same volume for every revolution of the drive shaft.

PERFORMANCE DATA—No. 26 and No. 13 PUMPS

Pump No.	Pump Shaft R.P.M.	Pounds Pressure	Hose Length and Size	Dry Suction Lift in Feet	Vol. in Gal. Per Minute
26	1600	120	500'—1½"	20'	150
13	1600	120	500'—1½"	20'	75

LIST PRICES — No. 26 — $200.00 No. 13 — $90.00

Slightly higher west of Rockies

FIRE PUMP DIVISION, Oberdorfer Foundries, Inc., Syracuse, N. Y.

SIRENO'S *NEW* "ATOMIC ROCKET"

The Largest and Most Powerful Vehicle Siren with 360 Degree Flashing Red Lights.

Complete Range of Sizes and Styles and Mounting.

WRITE DEPT. No. 27 FOR FREE CATALOG

THE SIRENO CO. INC.

214 WILLIAM STREET *Established 1908* NEW YORK 38, N. Y.

lation to prove the presence or absence of such flammable liquids. Certain spots and points in the building which are suspected of having been stimulated by the use of a flammable liquid, a piece of the flooring, beam or other structural member should be cut out and turned over to the chemist. If flammable liquids have been used, this fact can be determined by vacuum distillation.

Photographs are particularly valuable in establishing the corpus delecti of the crime of arson. By photographs, the

Example of short circuit in lamp cord.

investigator is able to bring visual proof of the evidence through which he can establish the elements of the crime. With a photograph, he can produce in court the scene, and through his testimony properly identify any materials or chemicals which were used to stimulate the combustion. It is to be remembered in this connection that pictures which are merely dramatic or spectacular, while they may be interesting, do not serve to point out the evidence as the investigator saw it.

Pictures can establish certain facts in incendiary fires: for instance, the investigator may show the position of door lock, electrical switches and installation; whether doors were opened or closed; whether bolts, locks or keys were in the locked or unlocked position and whether the door was locked from the inside or from the outside; if any doors or windows were forced.

Experience and skill in photography is necessary in arson investigations. It is essential that a photograph be accurate and this will depend upon the photographer's knowledge upon the action or effect of light, and upon the efficiency of the camera. This does not mean that the photographer must be an expert. Many skilled amateurs are particularly efficient in this type of work; however, where the department is not large enough to maintain a full-time photographer, it is well to have on call a professional photographer who will respond when needed.

All photographs which are to be introduced in court as evidence should have marks and notations written on exhibits. Such notes and pertinent facts have evidential value when considered together with the photograph. The photographer, then as a witness, may explain his notes

and verify their correctness on the stand. Such notes and markings should appear on the back of the pictures, or mounted on the margin of the exhibit. They should never be written out and placed within the field of the camera when the picture is taken.

The relevancy of the material being photographed is of the utmost importance. Photographs must be relevant to the facts which are to be established before they can be admitted in evidence. They must tend to establish or to disprove some point at issue in the case. Photographs which do not furnish any aid to the jury in determining the facts of a case are irrelevant, and should not be included.

Together with photographs, maps, diagrams and models are particularly valuable for illustrating certain testimony. Maps and diagrams can be drawn to scale when it is necessary to point out particular distances or a location with reference to other parts of the building. With photographs as a pictorial representation, a map, diagram or a model may be used to correct the small degree of inaccuracy in a photograph with regard to perspective or distances.

When photographing evidence, make notebook entries of the following points:

1. The time that the picture was taken,
2. The make of the camera, film and camera speed,
3. All details as to lens, exposure time, reading on light meter and flash bulbs used; and,
4. The person who developed the pictures and anyone present at the time the pictures were taken.

Papers, documents and records are valuable as evidence in court. Often these are charred and burnt beyond recognition. However, by the use of chemicals, infra red photography and ultra violet light they may be made legible and photographic. Therefore, whenever damaged papers are found they should be handled as little as possible. When feasibly, the strong box or container in which the papers are found should be delivered to the laboratory without disturbing the papers. When this cannot be done, then the papers or documents should be placed between two sheets of metal or glass and carefully packed in a box for transportation.

In many cases a great deal depends upon the positive identification of the handwriting in certain books, letters or documents. In such cases the testimony of a graphologist is essential. Handwriting is a habit that cannot be broken, and try as they will to disguise it, imitators are unable to change such characteristics as slant, ease of flow, and pressure of pen; therefore, genuine and questionable handwriting can be compared by an expert and his testimony is usually accepted by the court.

Another point to remember is that when books, records, or other documents have been changed, such forgeries can usually be detected by comparing the pens or instruments used in transcribing. Pens or business machines usually change over a long period of time. However, a record which has been forged will show one instrument used throughout. This can be detected by an expert and it can be proven in court that the records, et cetera, have been changed. In cities and towns where the services of such experts are

SIREN FIREMAN'S BOOT

20 KEY FEATURES--YOUR GUARANTEE OF FOOT COMFORT, SAFETY AND LONG WEAR!

TOP NOTCH SIREN "FALLS" BRAND

3" HIGHER ST. KING LENGTH FOR QUICK ADJUSTMENT AND MORE PROTECTION

OUTSIDE, EXTRA RUBBER REINFORCEMENT ABOVE KNEE

ENTIRE SKIRT NET LINED FOR AMPLE STRETCH

STURDY INSIDE PULL-ON LOOPS AT KNEE

WARM WOOL LINING

REINFORCED KNEE PATCH OF CREPE RUBBER

VULCANIZED BY AMMONIA CURE—PATENTED EXCLUSIVE FEATURE

SIX PLIES OF FABRIC AND RUBBER THROUGHOUT LEG

SPECIAL STIFFENING COLLAR FOR EASY FITTING

FABRIC AND RUBBER IS "SHINGLED" TO DISTRIBUTE STRAIN

FOURTEEN PLIES OF FABRIC AND RUBBER WITH SPECIAL FRONT STAY

MADE OVER SPECIAL LAST, FULLER THROUGH THE ANKLE AND INSTEP

NINE PLIES OF FABRIC AND RUBBER AT THE VAMP

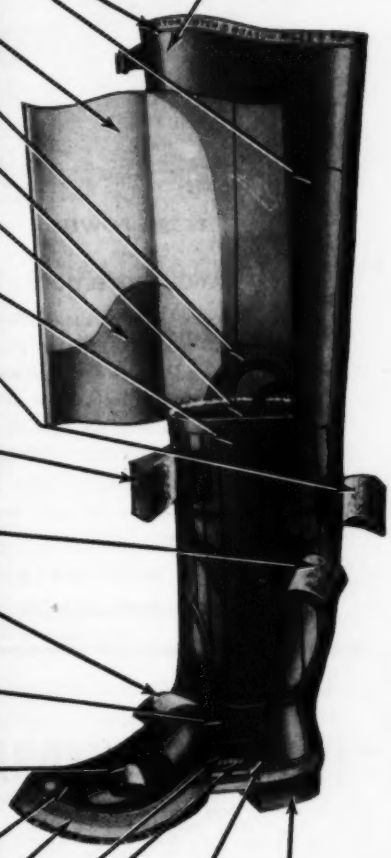
REINFORCING TOE CAP PROTECTION

EXTRA THICK SUPER-QUALITY SOLES

FELT COVERED CUSHION INSOLE

REINFORCED LADDER SHANK

SPECIAL HIP WITH HIGH FRONT SKIRT. ALSO IN SHORT HEIGHT



FULL SIZE HEEL

THICK SIDE GUARDS AT SHANK-PROTECTION AGAINST NAIL OR SPLINTER PUNCTURING

BEACON FALLS RUBBER FOOTWEAR
BEACON FALLS, CONNECTICUT

EXTRA POWER
Means
EXTRA PROTECTION

Every fireman knows the indispensable assistance of portable electric power—for flood lights and for life and time saving debris-cutting power tools. Now every fire department can afford an Economy Engineered low cost WINCO GENERATOR, powered by dependable 4-Cycle gasoline engine—quick starting in any weather—readily serviced anywhere!

Model 1800 shown, supplies 1000-1350 Watt, 60 Cycle, A.C., 115 Volt power. Mounted on your truck, your Winco goes where you go and is ready to serve you at a moment's notice! Models also available in 500 Watts to 10 KW capacities, priced as low as $142.50 (less engine).

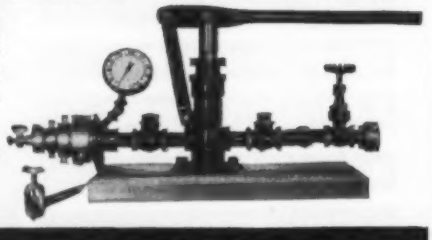
WRITE TODAY FOR COMPLETE DETAILS

WINCHARGER CORPORATION 2157 E. 7th St., Sioux City, Iowa
A Subsidiary of Zenith Radio Corporation

"TRUMPET" HYDRAULIC TEST PUMPS

Ideal for testing hose lines of all sizes and length, directly from hydrants, without tying up costly fire apparatus. Equally efficient for checking high pressure air lines, sprinkler systems, boilers and pressure gauges. Adapter available for testing Soda & Acid and foam type extinguishers. Has 400 lb. capacity.

Easy to use — accurate — built for long, dependable service. See your Wooster Brass representative or write direct.



HOSE BRASS GOODS W-B Line THE WOOSTER BRASS CO. WOOSTER, OHIO

THE WOOSTER BRASS CO.
WOOSTER OHIO

MANUFACTURERS OF A COMPLETE LINE OF DISTINCTIVE FIRE FIGHTING EQUIPMENT

not available, the laboratories of the Federal Bureau of Investigation will perform the service upon request.

Where a badly charred and burnt body is found after a fire, it should always be turned over to a pathologist for post mortem examination. Many murderers attempt to hide the evidence of their crime by means of arson. The medical examiner can determine if the body of the person found was alive at the time of the outbreak of the fire. It can be determined if death preceded the fire by the absence of carbon monoxide in the blood, the absence of blistering and redness of the lungs, soot inhalation or dust and smoke in windpipe, and the absence of blisters on the body. They can also determine any violence or injuries by fractures of the bones, and so on. Such fractures when found do not necessarily mean that there has been foul play. They could have been produced by the action of heat on the soft tissue of the bone. However, when taken together with the other findings of the pathologist they may be the means of bringing a murderer to justice. In all such cases it is important to obtain a positive identification of the victim, and in this the pathologist will be extremely helpful. He can determine the age, sex, height and race of the body found. In most cities and counties, the coroner or medical examiner is charged with this responsibility and the investigator should always seek his help and cooperation.

With Our Readers

Word from Alaska

To the Editor:

You have no idea how much good you have done in publishing the two articles which I sent you in FIRE ENGINEERING. Chief Ray Larrabee wrote in from Gulick, Canal Zone, where he is now chief of the U. S. Army Fire Department, and expressed pleasure at reading of our work in Alaska. Ray was formerly chief at West Palm Beach, Florida, where I used to do considerable fire duty.

Chief Sam Huxley of the U. S. Army Fire Department at Fort Richardson came to me, all smiles, and referred to your article about my hospital lectures. He said a former fire department associate had written to him from New Jersey and said that he had not been able to locate Chief Huxley for years until he read about him in the article. So your magazine, among many other things, is a sort of Missing Persons Bureau. Strange what a small world this is. Many others have written to me from far and wide to refer to these two articles.

From October to December 1952, I gave twenty-two Fire Prevention lectures to more than 1,400 people. To date (February 3, 1953), we have not had a single fire in the areas where I lectured. . . . Chief George Burns of Anchorage, Alaska, asked me to give a lecture on "Hospital Fires, Fire Prevention and Rescue Operations" to the two-day conference of hospital directors from Alaska's civilian hospitals. . . . As a result . . . they want me to suggest a Fire Prevention Code for the Territory of Alaska.

Following the explosion and fire in Washington, D. C., when more than

firemen were injured, I wrote to Chief Millard H. Sutton, Battalion Chief Alfred M. Grunwell and to Battalion Chief William H. Boswell to extend my sympathy. For three years I served as their chaplain in the nation's capitol before coming to Alaska.

Soon our arctic winter will be over. It has been very mild to date with little snow and hardly any really cold weather in our area. Already the days are getting longer.

Fraternally yours,
NORRIS T. MORTON
Chaplain (Major) USAF
Hospital Chaplain

Civil Defense Tests

To the Editor:

I want to compliment you on your fine editorial in your February, 1953, issue of FIRE ENGINEERING, dealing with Civil Defense. It was timely, informative, and in keeping with your interest in the nation's internal security. I am sure that this interest will never diminish.

There is one exception I should like to make in your editorial. You may be right, in general, when you say, "When you read about Civil Defense tests, and listen in on meetings of various C.D. personnel, and study C.D. programs, you find that fire defense frequently does not receive the prominence it deserves." But here in Connecticut, particularly in Eastern Connecticut, the fire services play an important role and are given due credit and respect for their planning and participation. When one realizes the magnitude of the destruction by fire due to bombing, in World War II, one must realize how valuable the fire services are in combating this threat. That is the reason we in Eastern Connecticut are stressing organization, training, and procurement of additional equipment in the fire services in the preparation for an adequate Civil Defense. We want the best, and I am sure we will get it. Our fire fighters will see that no stone is left unturned toward this end.

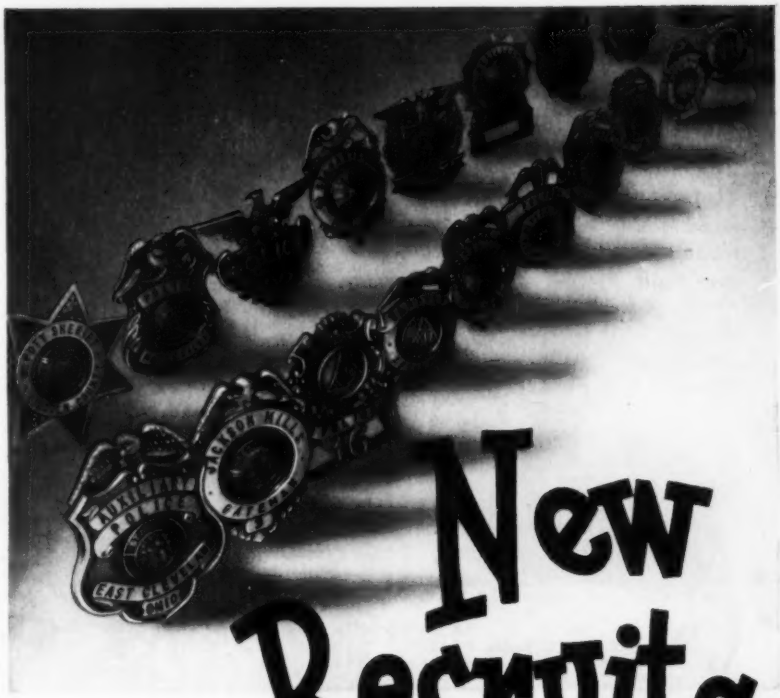
Very truly yours,
R. H. BARNES,
Civil Defense Director,
New London Area.
State Police Barracks,
Colchester, Conn.
March 3, 1953.

Vermont Plans Tougher Fire Laws

Vermont's committee for Fire Safcty, appointed last fall by Governor Emerson, has announced that it will make recommendations to the forthcoming Legislature for broad changes in statutes dealing with fire prevention.

Objectives outlined by the committee include: (1) Increased public awareness of the "critical" fire loss problem in Vermont; (2) State fire prevention laws with "teeth"; (3) Legislation to facilitate purchase of fire fighting equipment; (4) Legislation to permit formation of fire districts with regard to geographical and practical considerations rather than town lines; (5) Improvement of fire fighting techniques in Vermont, training of fire fighting personnel, and greater public information on fire prevention.

The committee is headed by John Adams Browne of Burlington, fire prevention engineer and municipal underwriter.



New Recruits

. . . deserve the finest Badges too —

Just like the veteran of your department, the new recruit is equally proud of his badge. That's why more and more departments are starting the men out with the finest badges. Be sure you ask your equipment supplier to show you Blackinton Badges the next time he calls.

Dealers Why should you promote and sell Blackinton Badges?

Because — (1) Blackinton sells only through authorized dealers — we protect and encourage your sales effort — we do not contact departments direct.

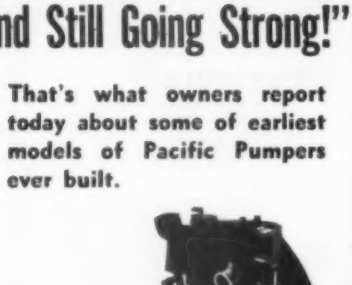
(2) Lower selling price with *higher* dealer discounts to you.

BLACKINTON

V. H. Blackinton & Co., Inc. Attleboro Falls, Massachusetts

"Almost 30 Years Old and Still Going Strong!"

That's what owners report today about some of earliest models of Pacific Pumpers ever built.



TYPE Z

WHEN THE FIRST Pacific Pumper was introduced, it was a startling innovation. To produce an efficient pump light enough to carry by hand into rugged terrain but powerful enough to deliver an effective flow of water to combat forest blazes was news of national importance. Today, after nearly 30 years, many of the earliest Pacific Pumpers are still in use and are still the favorite of experienced fire fighters . . . mute testimony to the stamina and dependability built into all Pacific Pumpers . . . and to Pacific Pumper's policy of supplying parts for even the earliest models.

TYPE Y

Years of engineering research and thousands of practical field tests made possible the improvements incorporated in the famous Type Y Pacific Pumper . . . the most powerful unit ever built for its weight and size. The Type Y Pacific Pumper quickly won the approval of experienced fire fighters and fire fighting authorities . . . and is still the standby of many of the nation's most practical forest fire fighters. Newer, post-war models of Pacific Pumper are now available . . . all even lighter, more compact and durable, and more versatile for a variety of purposes.

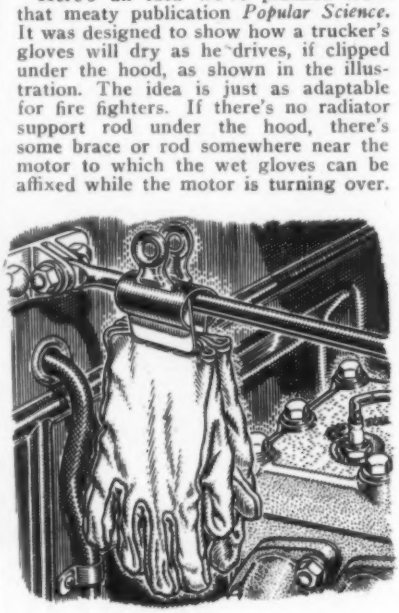
Write for data on the complete line of Pacific Pumpers, hose and accessories

PACIFIC *Marine Supply Co.*
FIRE EQUIPMENT DIVISION
SEATTLE 1, WASHINGTON

Short Cuts and Gadgets

DRYING FIREMEN'S GLOVES

Here's an idea we've plucked from that meaty publication *Popular Science*. It was designed to show how a trucker's gloves will dry as he drives, if clipped under the hood, as shown in the illustration. The idea is just as adaptable for fire fighters. If there's no radiator support rod under the hood, there's some brace or rod somewhere near the motor to which the wet gloves can be affixed while the motor is turning over.



P.S.—The wise fire fighter has a "spare" pair cached way handy, some where on his rig, so he can have one pair drying while he's using the other.

A doff of the topper to *Popular Science*.

* * *

DRAIN WITHOUT STRAIN

This idea comes from a pair of brothers in the Taunton, Mass., Fire Department. One of them, Pump Operator Frank J. King, conceived the idea; the other, Captain Arthur J. King, contributed the "short cut." He writes:

We have a Buffalo 500 GPM centrifugal pump (with hose reel on top of truck). It is customary in this department to drain the pumps and booster line during freezing weather. The draining of the booster line (150 ft. of ¾-in. rubber hose), necessitates the removal of the hose and hanging the same in the tower to drain. The location of the coupling at the reel is in a very awkward position and the entire operation involves considerable time and labor.

"The short cut is as follows: Close all valves, remove suction caps and allow water in the pumps to flow out; put caps back on and create a vacuum in pumps (about 15-in.); open nozzle on booster line and open valve leading to booster line; do this operation twice and our booster line is drained; then remove suction caps, open gates, etc., and drain pumps thoroughly as usual.

"The vacuum in the pumps will drain the booster line in less than half the time and the apparatus is put back in commission much more quickly. The pump operator is able to do this work alone while the other men busy themselves placing other equipment back in commission.

"This idea is especially useful when a booster line is used at a fire during freezing weather and the truck must remain at the scene.

Thanks, Captain King. We don't know whether or not the idea will work with other makes of pumpers, but it's worth considering, anyway.

* * *

FRIENDSHIP GIVES USEFUL D.C. DATA

Friendship Fire Association, Washington's celebrated fire buff's organization, has prepared a condensed data-card about the District of Columbia Fire Department which has made quite a hit wherever received.

Feature of the card is the stock upon which it is printed, as well as the statistical data. The card, which measured 6" x 7", is yellow fluorescent coated on the side containing the printing, giving it striking prominence.

The data includes the unit locations of engine, ladder, and other D. C., fire companies and units, and the set-up of the organization, by battalions.

Headquarters of Friendship Fire Association are at Engine 21 on Connecticut Ave., N.W.

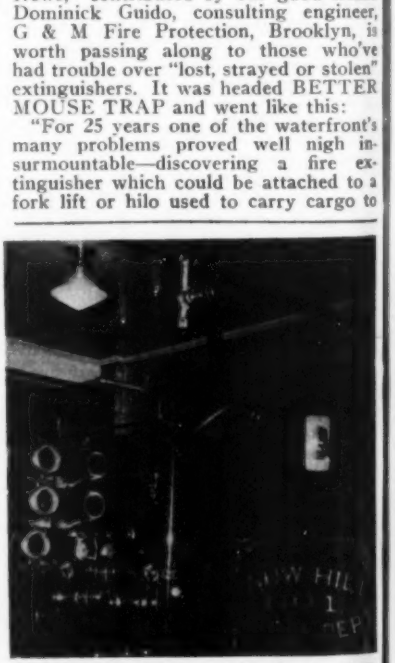
THANKS, IRVING JOHNSON.

* * *

CIRCUMVENTING THE EXTINGUISHER SWIPER

A little item in the New York "Daily News," contributed by our good friend Dominick Guido, consulting engineer, G & M Fire Protection, Brooklyn, is worth passing along to those who've had trouble over "lost, strayed or stolen" extinguishers. It was headed BETTER MOUSE TRAP and went like this:

"For 25 years one of the waterfront's many problems proved well nigh insurmountable—discovering a fire extinguisher which could be attached to a fork lift or hilo used to carry cargo to



Convenient Outlet for Filling Booster Tank

The Snow Hill Volunteer Fire Department, Snow Hill, Md., has rigged up this overhead tap for cutting down the time for filling booster tanks formerly wasted when a garden hose was used.

We're indebted to Robert C. Byrus, Director, Fire Service Extension, University of Maryland, and editor of the clever little publication, "Fire Service Bulletin," for this item.

and from the ships and could not be stolen. A consulting engineer of a fire protection company came up with one of those brilliant strokes which seem so simple afterwards. He welded the extinguisher to the hilo and added a nine-foot hose which protects both the machine and the surrounding area from fire.

"A dry chemical is used instead of carbon tetrachloride, which the men formerly used to remove spots. Now the boys occasionally have a spot on their vests, but the piers have fire protection.

"More than 1,000 of these devices have been sold thus far to the delight of the engineer—and to the field representatives of the manufacturers of the dry powder chemical, who demonstrated the device to the stevedores."

* * *

THINK BEFORE YOU PULL A FALSE!

It's not a cure but it has proved a palliative, this bright red metal sign stuck over fire alarm boxes in the City of New Haven.

PENALTY FOR FALSE ALARM
$500 FINE
OR 1 YEAR IN JAIL OR BOTH
THINK
FIREMEN OR OTHERS MAY BE
KILLED
BECAUSE OF
FALSE ALARMS

According to Chief Paul P. Heinz, who's tried about everything in the calendar to curb the false alarm evil, this has helped particularly in areas where the rah! rah! college boys—perhaps primed with too much wassail, were wont to snap boxes.

The signs are red enamel on metal, with white lettering, and measure about 10" x 8". They are mounted on a simple iron bracket raised over the box on the pedestal, or fixed to the pole over the box.

* * *

The Old Timer Says—

The other day four firemen of an engine company in one of our largest municipal fire departments were injured when a hand-bracket gave way while the rig was en route to a fire.

This was a pumper and the men were ridin' the rear step as per regulations.

I've heard of men gettin' hurt—and killed—by falls off a runnin' board of a ladder truck, when the side ladder they were holdin' onto gave way, but such accidents to pumpers are pretty rare.

This oughta serve as a warnin' for all hands to inspect all hand-holds with special care.

* * *

SHOULD FIRE TRUCKS HAVE SANDERS?

Recent installation of an electrically operated sander on the pumper of the Hyattstown, Md., Fire Department raises the question: is the fire service overlooking a bet by not mounting these useful "gadgets" (if you can call 'em that) on the larger, heavier vehicles —particularly in those fire departments that encounter slippery roads due to icy sleet or rain?

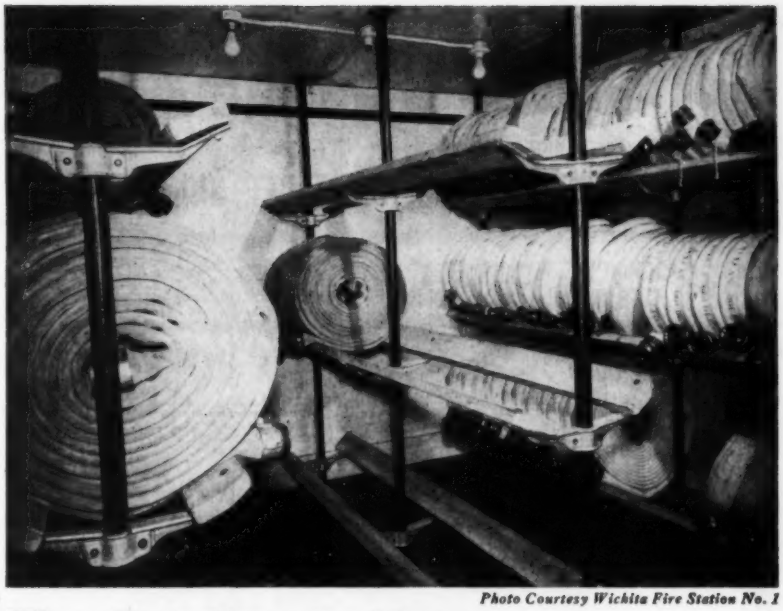
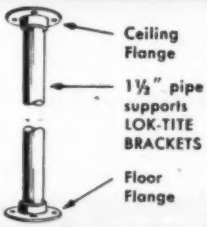


Photo Courtesy Wichita Fire Station No. 1

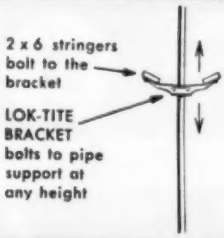
The Solution to Hose Storage Problems

FEATURES

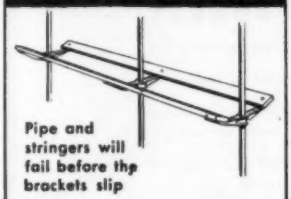
SIMPLE INSTALLATION



EASY ADJUSTMENT



BIG LOAD SUPPORT



Build Your Own Racks With Lok-Tite Brackets

MIGHTY few station houses have all the room they need for good housekeeping. Lok-Tite brackets help solve the hose storage problem by allowing ample ventilation and access in limited storage space.

Build your own racks with new or used materials. Design your own storage to take full advantage of the space available. Have ample room for fittings inspection and ventilation.

Lok-Tite brackets, light weight aluminum alloy, designed for strength and easy installation.

$3.65 F.O.B. Wichita

W-B MANUFACTURING COMPANY
157 NORTH WACO STREET **WICHITA, KANSAS**

POWHATAN

QUARTER TURN SHUT-OFF SIAMESE

COMPACT DESIGN.

POSITIVE AND EASY SHUT-OFF UNDER ANY PRESSURE.

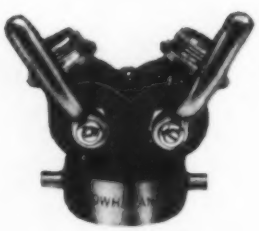


PLATE 175

MADE OF HIGHEST GRADE RED METAL.

MINIMUM UP-KEEP EXPENSE.

SWIVEL SUPPLIED WITH PIN LUGS OR OUR SENSIBLE LUGS (ROCKER LUG TYPE).

This is but one item in our vast line of precision tooled, strongly built, brass fire-fighting equipment. Since 1892 our single aim has been—improvement of our products—and repeat orders from Fire Departments all over the United States have proven the value of such a policy.

BE SURE TO CONSULT POWHATAN BEFORE PLACING YOUR NEXT ORDER.

POWHATAN BRASS and IRON WORKS

RANSON, WEST VIRGINIA

Phones 93 & 94 Charles Town, West Virginia

Established 1892

Write for Bulletin 6600-F

MORE *EFFECTIVE* FIRE PROTECTION

CITY • RURAL • FOREST

MODEL 6600 PUMPER—Instantly Self-Priming—No waiting when seconds count

HIGH PRESSURE—Use one or two hard-hitting streams or fire-blanketing fog-spray

LIGHT WEIGHT—Easily carried to source of water or fire area

NEOPRENE IMPELLERS—Pump dirty water as well as clean water—assure long life

POWER—Efficient 4-cycle, air-cooled 5 HP engine known and serviced world-wide

BY-PASS VALVE, SPRING LOADED GREASE CUP, NO LOSS OF PRIME, PLUS MANY OTHER FEATURES

UP TO 40 GPM AT 150 PSI

WEIGHS ONLY 110 LBS.

MARINE PRODUCTS COMPANY

515 LYCASTE AVENUE • DETROIT 14, MICHIGAN

Converted DUWK

(*Continued from page* 301)

veloped while it was being towed upstream. It has also towed several disabled pleasure craft to safety and pumped the bilges dry on more than one pleasure craft. Its worth in protecting summer cottages along the river is immeasurable, said the chief.

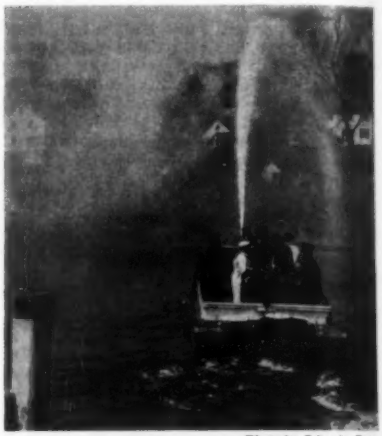


Photo by John A. Cox

DUWK's versatility and snuffing out riverfront fires inaccessible from land is demonstrated in this actual grass fire which broke out while firemen were demonstrating craft. Besides being a versatile fire fighter, the "duck" is equipped for rescue or pumping operations.

The amphibious fire truck gives Essex Fire Department its own special Marine Division and the distinction of having a fire boat probably unlike anything else in the United States.

But it still leaves the department with an unsolved manpower problem. Nobody wants to go to fires anymore.

Now everybody wants sea duty!

Businessmen Cooperate to Meet Fire Emergency

Joplin, Mo., businessmen cooperated with the city's fire service during the recent drought in a rare example of voluntary civic enterprise.

The problem was a fire hazard. It arose almost overnight from the incendiary condition of dried-out grasslands, and by the time it was recognized, it had endangered the city's entire residential and business community.

The situation dawned on Joplin's businessmen following a fire which swept over a 30-acre tract of grassland, destroyed a restaurant and motel and badly damaged a bulk oil plant.

A quick review of the problem by civic and other officials disclosed that only two of Joplin's nine pieces of fire-fighting equipment were available when the fire call was sounded. The remaining fire force was out fighting small grass fires in response to the more than 81 alarms received that day.

Their problem was taken to Acting Mayor V. E. Kenney. A state of local emergency was declared and a Citizens Emergency Committee was formed with J. T. Jones of the Empire District Electric Co. as chairman. The Joplin Chamber of Commerce staff was mobilized, and under President Arthur Christian, called an emergency meeting of the leading businessmen and industrial-

ists, representatives of the local National Guard, the Naval Reserve, the Civil Air Patrol, the Highway Patrol and the American Legion.

Voluntary help was asked for. One industrialist said: "I have no equipment but you can have ten men off my production line whenever they are needed—day or night." A businessman offered five men for fire-fighting duty on the same basis. A dairy company spokesman offered a 1500-gallon tank.

Before the meeting adjourned, Joplin's business and industrial firms had supplied the emergency committee with 200 men and 45 trucks with varying types of equipment. These were assigned by the fire department to the city's three fire stations for emergency service in fighting the grass fires. Joplin's regular fire equipment thus was kept free to fight the more serious blazes, if the necessity arose.

The auxiliary forces had no sooner been rounded up than an emergency call came in from a neighboring community where a serious fire had broken out. One of the largest emergency crews was dispatched and it helped bring this fire under control within two hours.

A short time later, the committee decided that it was an unnecessary imposition on local industry to ask for the continued use of both its men and its equipment. The Joplin Chamber solved this problem by making funds available for hiring auxiliary firemen. Within 48 hours, they had crews which operated on the job around the clock.

White Castle Uses Sound-Powered Telephones

The White Castle Volunteer Fire Department, of White Castle, La., has developed its own answer to the problem of field communications between source of water supply and head of the hose line. The problem, which every fire officer realizes is communication between the officer directing the fight and the operator at the pump, which may be blocks away from the actual fire.

The White Castle solution—a sound-powered telephone system that keeps "both ends of the hose line" in close touch with each other.

The White Castle lads recently installed a pair of sound-powered telephones on their truck. They were obtained from Ed Heath, the department's photographer, and installed by Assistant Fire Chief John Marquee. The latter made everything except the wire and the phones; he rigged the latter in such a manner that the cable, or wire, for the phones, is pulled off the apparatus when the hose is removed.

The phones being used are comparatively cheap and inexpensive to maintain since, being sound-powered, they need no batteries. They are similar to the instruments used by linemen and telephone operators, except the fire department's phones have two earphones. The heart of the entire system is a small quartz crystal, which can be purchased in most radio supply stores.

Fire Chief Eddie Boudreaux writes that what spurred the department to install the system was a local church fire at which most of the apparatus was parked a block or more from the blaze and the only way to establish communication was to send runners back and forth.

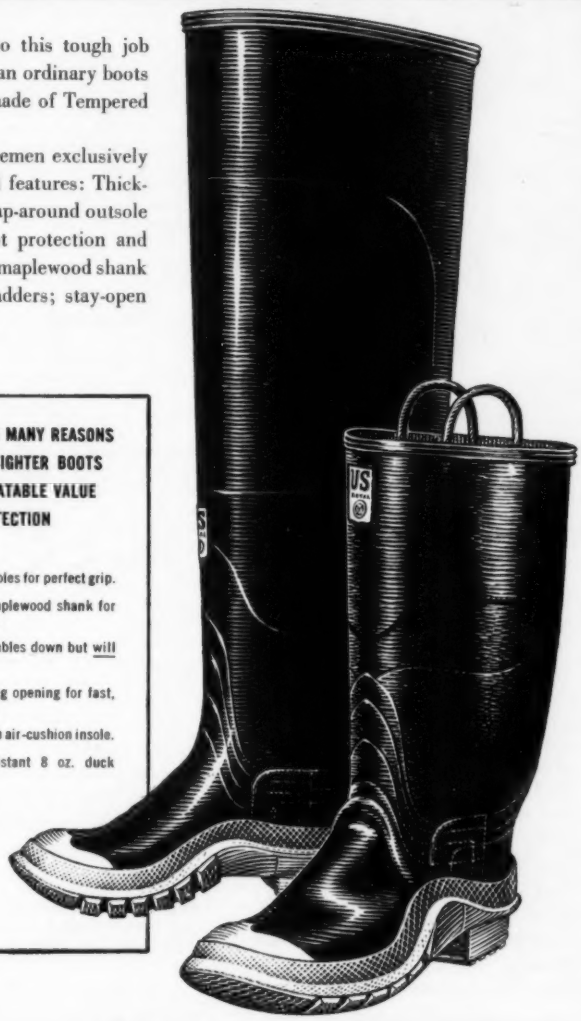
THE BOOTS THAT HELP FIGHT FIRES

—and stand up to this tough job *one third longer* than ordinary boots because they're made of Tempered Rubber.

Designed for firemen exclusively with many special features: Thick-cleated, white, wrap-around outsole for maximum foot protection and visibility; built-in maplewood shank for comfort on ladders; stay-open reinforced collar.

CHECK OFF THESE MANY REASONS WHY U. S. FIREFIGHTER BOOTS GIVE YOU UNBEATABLE VALUE AND PROTECTION

- Thick-cleated outsoles for perfect grip.
- Built-in sturdy maplewood shank for ladder climbing.
- High skirt that doubles down but will not drag.
- Reinforced wide leg opening for fast, easy on and off.
- Wool felt lining with air-cushion insole.
- Smooth, snag-resistant 8 oz. duck construction.
- Firmly anchored, large pull-on loops.



U. S. Royal Firefighter Coats

100% waterproof coats take a drenching, yet keep a man dry. Sturdy black rubber with warm, napped maroon-colored linings. Roomy, 2-piece body—raglan shoulders for action; fly-front in instant snap-and-dee fasteners; large patch pockets. All seams are cemented, outside gum-strapped; entire coat is then vulcanized.

US ROYAL TEMPERED RUBBER

UNITED STATES RUBBER COMPANY
ROCKEFELLER CENTER • NEW YORK

PROTECTION
with
Freedom of Movement

A SCIENTIFICALLY BUILT
SAFETY SUIT

New design and construction. NOT an "asbestos suit" but a scientifically compounded garment utilizing the most modern insulators against heat, fibre glass, aluminum foil, vinyl-treated glass cloth *and* asbestos. Tested under actual field conditions in temperatures ranging from 350 deg. F. to 1800 deg. F.—with and without respiratory protective equipment.

Get the I.S.S. Safety Suit that is making good in the fire service; at airports; in industry—wherever personnel must be protected against searing heat. Complete literature is yours for the asking.

Also manufacturers of protective clothing and asbestos blankets 4' x 6', packed in handy permanent carrying cases.

NOTE: The I.S.S. Safety Suit will be demonstrated at the New Haven Fire Department Training Grounds, Saturday, May 23.

INDUSTRIAL SAFETY SPECIALTIES CO.

PERKASIE • PENNSYLVANIA

The WATCH DESK

Overhauling the firemanic news of the day

by ROI B. WOOLLEY

Philadelphia Brothers Save 600 "Croakers"

The Greek dramatist Aristophanes, who wrote a comedy about frogs a couple of thousand years ago, had nothing on the Brothers of Engine 4 and Ladder 5 of the Bureau of Fire, Philadelphia, who bumped into a real life drama involving the freckled croakers early one day.

It seemed like an ordinary fire at first to the crews of the two companies responding on a verbal alarm, but when they got inside the burning building at 1619 Spruce st. at 5:35 A.M. and reached the second floor, they got a surprise. There in water-filled tanks and jars they found some 600 frogs, of all sizes, shapes and 'voices'. And if the firemen were surprised, so was the spindly-legged colony.

Having no place to hop, the croakers began to paddle and splash around in their aquariums, while the smoke eaters began the task of rescuing them. 'Tis reported the latter did a grand job, and not one of the tailess amphibians of the genus *Rana* was lost.

The building was occupied by Samson Laboratories, which used the frogs, imported from South America, in clinical and research work. The fire was discovered by a newspaper vendor, who saw smoke coming from second floor windows. His alarm brought the companies, to find flames shooting out of the structure.

Enginemen shot a stream into the building, knocking down the fire, for entry via ladder. Once inside, and the identity of the "occupants" known, some of the Brothers attacked the blaze while others turned their attention to the frogs. They covered the tanks to keep out the smoke and excess water, removed some of the jars out of the "line of fire," placing some on window ledges, and if the frogs croaked in appreciation or alarm, the noise was lost in the hubbub of fighting the fire.

By 7:00 A.M. the fire was out and everybody was happy, including the frogs. The owner of the lab' praised the smoke eaters for their handling of the amphibians. "They really did a good job" he said.

EDW. SPRANGER

* * *

Cool Head—Hot Seat

A quick squat into a pile of snow is the best way to extinguish a fire in the seat of one's trousers, James McCullough of Akron, O., informed doctors at City Hospital as they treated him for burns of both legs.

McCullough, a truck driver, was standing on the road near the rear of a large truck when suddenly the truck backfired. A sheet of flame swept the back of the truck driver's pants and they took off. So did McCullough, in a hurry, punctuated by yells; he dashed around in circles leaving a trail of smoke behind him.

As the blaze consumed his trousers to the amusement of the crowd that collected, McCullough suddenly spotted the means of relief. With a leap he reached a big pile of snow and sat down hard. When the fire was extinguished, he went to the City Hospital for repairs to the person, while patches were put on his pants.

"BOSTON" CONTRIBUTOR

* * *

Cop's Extinguishers to Go in Moth Balls?

Fire extinguishers which the Suffern, N. J., police have been toting around in their patrol cars, and which they have put to good use in the past in putting out small fires, particularly those involving automobiles according to press reports are to be put in moth balls for a trial period.

Fire Chief Walter Flannery has asked the Suffern village board to take action on a recommendation which he said was made by the fire council of the fire department.

Chief Flannery said the council wants to abolish the policy under which the police first investigate small fires before sounding a general fire alarm and thus have the fire department respond to all fires, even those in cars. The chief said he felt such a plan would give the firemen better practice. He suggested that the police merely touch off the alarm whenever a fire is reported to them (the police receive all alarms of fire) and let the vamps take over from there.

Police Chief Joseph A. Vilord said he had no objection at all to the proposal, if that was the way firemen wanted it.

WM. PAUL BABCOCK

* * *

From Fire Bells to Wedding Bells

Brother Cupid has been busy working among the Firemen in Alaska. His latest victory was scored over the Alaskan Command Fire Marshal, Paul J. Cunningham, who was united in marriage in a colorful ceremony at the Methodist Church in Anchorage, Alaska, by Fire Chaplain Norris T. Morton of Elmendorf Air Force Base on Friday evening, February 27, 1953.

Chief Marshal for the entire Alaskan Air Command, Paul Cunningham married Miss Mae B. Dunlap of La Follette, Tennessee. Marshal Cunningham comes from Denver, Colorado.

The church was filled with guests which included a large number of members of the Air Force Fire Department. A reception followed first at Pioneer Hall and later a house reception was given by the attending couple at their home.

One young couple who attended the wedding heard Nuptial Bells that night instead of Fire Bells and he sought out Chaplain Morton and talked over plans for another wedding in the near future. The girl's fiance is also a fireman at the Elmendorf Fire Department.

* * *

The Window Shade Mystery

A window shade mysteriously burst into flames one Sunday afternoon in the Dayton, Ohio, home of Harlan Daye. Daye beat out the flames with a wet towel while his wife telephoned the fire division.

Acting District Chief Russell Koontz, seeking a clue to the fire's cause, noted

there were no electric wires, no open flames or any of the usual igniters near the shade.

But to Koontz, the fire was no mystery; in fact, he saw right through it.

The storm window was defective, according to Koontz. It had a whorl or wrinkle that acted as a magnifying glass to concentrate the sun's rays and pinpoint heat on the shade.

Homeowner Daye indicated he would replace the glass pane.

* * *

The Facts About Falt—at Peabody

Last September we carried an item about one Leonard Falt, fire apparatus salesman, who sadly enough, had left his demonstrator at home, when he ran slap dab into a fire. Unfortunately, we had the wrong dope. We got the name wrong—were told it was Leonard Halt. Now comes Deputy Fire Chief Gordon H. Jameson, Saugus Auxiliary Fire Department (CD) of Saugus Mass. to set us right. Here's what really happened: Falt is a salesman for an Indiana fire apparatus company. He and his 'kit' were in Peabody to demonstrate his product, working around the fire station but somehow his secret wish that someday, in some way, he might have a chance to prove his product's mettle on a real fire never seemed to pan out.

Salesman Falt was enjoying a late meal at a Quinlan square restaurant when he discovered a real fire in a shed nearby. Asking the counter girl where the nearest fire alarm box was he got the reply "I don't know." "Where's the phone" he then asked. "Over there," the counter girl replied. He rushed to the phone and found he needed a nickel, which the girl gave him after casually opening the cash drawer.

Fire headquarters answered promptly, and Falt identified himself and reported "There's a fire up where I'm eating."

"Oh, you mean you're waiting for a ride back to the station," was the answer from the desk, for the lads at the fire house had promised him transportation when he was ready to return.

"No," shouted Felt, "I mean there's a real fire out back!" And just to give authenticity to his statement, somebody else by that time had found the fire—and Box 27, and yanked the hook. Headquarters wasted no more seconds on idle chatter.

The fire was in a shed in a thickly settled Sherman street area but Engines 1 and 5 promptly doused it before it could spread further.

And again, Falt's demonstrator lost its opportunity.

Living on Borrowed Masks?

According to Charlotte, N. C., news dispatches, "after eight firemen had been overcome by smoke in fighting a fire that destroyed Kennedy's Drug Store in Gastonia, N. C., gas masks were borrowed from the Gastonia National Guard Armory, and the firefighters continued their battle with the flames."

The press story relates further that according to Fire Chief Robert Rhyne, the flames were kept away from an adjoining building after the masks were borrowed. Accounts, however, do not describe the kind of masks used.

The drug store fire was fought by all but one of Gastonia's nine fire engines.—D. G. SPENCER.

Waterous-equipped trucks built by the Boardman Company for Oklahoma City's Fire Department

8 MORE WATEROUS EQUIPPED PUMPERS FOR OKLAHOMA CITY

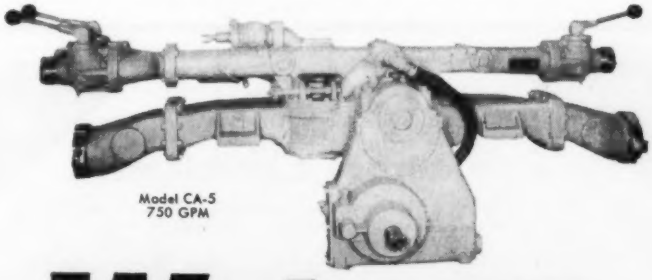
The Model CA-1 centrifugal pump chosen by Oklahoma City in its modernization program is a compact, rugged pump noted for its dependability and ease of operation.

Its balanced bronze impeller runs in renewable bronze wear rings. The shaft is stainless steel, and oil-lubricated ball bearings are used throughout. Pump shaft bearings are protected from water by oil-seal, flinger and packing.

WATEROUS design simplifies maintenance. All parts are accessible. Packing can be adjusted or replaced without disturbing rest of pump.

There are now 11 WATEROUS Fire Pumps on the job in Oklahoma City . . . helping that city build a reputation for having one of the most modern and efficient fire fighting organizations in the Southwest.

"Preferred Fire Pump Specifications" is a handy guide prepared to help you in specifying fire pumps for your city. For free copies, write WATEROUS COMPANY, St. Paul 1, Minnesota.



Model CA-5
750 GPM

Waterous

DEPENDABLE PUMPS

SINCE 1886

No. 930 Junior Type Roto-Rays

No. 931
Large Type Apparatus Roto-Rays

SEEING IS BELIEVING!

And these powerful Buckeye signals leave no doubt in the minds of pedestrians and motorists that official vehicles are on the way!

The revolving red lights of the Roto-Rays cut through the glare of street lights, giving the exact location of your apparatus and the direction in which it is traveling.

Likewise, the Buckeye Moto-Ray provides positive identification of emergency vehicles by day or night, throwing its strong red beam from left to right 40 times a minute.

No. 950 Moto-Ray

Buckeye

FIRE DEPARTMENT ACCESSORIES

BUCKEYE IRON & BRASS WORKS • DEPARTMENT E
P. O. BOX 883, DAYTON 1, OHIO

QRS

Flameproof Chemicals

QRS DE LUXE for drapery material, soft finish, dry cleanable, withstands high temperature. Instant penetration. Approved by State of California and City of N. Y.

QRS No. 8—Clear flameproofing for foliage, wood, bamboo, shades, grass rugs, etc.

QRS No. 400 for drapery material. Retails for $1.00 gal.

Write for Catalog. Dealers and Jobbers Wanted

Q R S NEON CORPORATION
Chemical and Process Division
170 North Halstead — Pasadena 8, California

What's Burning?

THE following list includes fires of $10,000 loss and over in the United States and Canada for the month of March, 1953.

Month Ending March 31, 1953

Phoenix, Ariz.—New Palmer Industries Sno-Fluff excelsior plt., destroyed. Spark.
Hamburg, Ark.—Two petroleum storage plts. owned by Lion Oil Co. and Pan-American Southern Corp., destroyed.
Hope, Ark.—Unit of Hope of Mfg. Co. destroyed. Faulty electrical wiring.
Sweet Home, Ark.—Fuller Elementary School destroyed.
Wynne, Ark.—Mebane Elementary School, three miles south, destroyed.
Fairfield, Cal.—Clothing whse. of Travis Air Force Base damaged.
Fresno, Cal.—Cotton plt. damaged.
Los Angeles, Cal.—Whse. of Max Factor & Co. cosmetic producers, damaged. Arson.
Los Angeles, Cal.—Juvenile Chair Mfg. Co. destroyed.
Monterey, Cal.—Ramsey Motors Cadillac Agency destroyed. Gasoline explosion.
North Hollywood, Cal.—Supermarket of Safeway Stores destroyed.
Salinas, Cal.—John W. Martin & Sons vegetable packing shed and brokerage office of F. J. McCann & Son destroyed. Floor furnace.
San Francisco, Cal.—Presidio Army housing project destroyed.
San Francisco, Cal.—Hotaling Bldg. destroyed.
San Francisco, Cal.—Lachman Bros. furniture whse. damaged. Cleaning fluid on heater.
San Jose, Cal.—Downtown apt. bldg. destroyed.
Denver, Colo.—Tropics Night Club destroyed.
Cromwell, Conn.—St. John's Roman Catholic Church destroyed.
Hialeah, Fla.—Clubhouse at Hialeah race course destroyed.
Jacksonville, Fla.—Apperson Chemicals, Inc., destroyed. Explosion.
Miami, Fla.—Davinci Wrought Iron Furniture Co. plt. damaged.
St.Petersburg, Fla.—First National Bank bldg. damaged. Short circuit in wiring.
Tampa, Fla.—N. Geraci & Co. produce whse. damaged. Pile of excelsior ignited.
Dalton, Ga.—Bldgs. occupied by Gregor Office Supply and Job Printing Co. and Al Veeters Camera Supply Shop destroyed; J. M. Feighery's sewing machine and tufted textile machine shop and Sim Judd bldg., damaged.
Bonners Ferry, Ida.—Mole River Lumber Co. sawmill destroyed.
Chicago, Ill.—Bldg. occupied by Van Clief Lithographing Co. and Ekonomik Bank Check Co. damaged.
Chicago, Ill.—Bergstrom Motor Service Garage and fifteen empty trucks, damaged.
Chicago, Ill.—Bldg. owned by Hauser Nash Auto Sales damaged, including 15 new and 40 used cars.
Chicago, Ill.—Samuel Mandel & Bros., scrap metal dealers, destroyed.
Danville, Ill.—Milner hotel damaged; S. S. Kresge store, adj. women's shop and 20 offices in the bldg., destroyed.
Peru, Ill.—Gymnasium at St. Bede's academy and college, destroyed.
Craigville, Ind.—Craigville Garage destroyed. Short circuit.
Fort Wayne, Ind.—McKay, Inc., dealers in wood products, boxes, crates and precut homes and garages, destroyed.
Indianapolis, Ind.—East Side whse. owned by Marietta Glass Mfg. Co., destroyed.
Indianapolis, Ind.—Berry Brothers Paint Co. damaged. Faulty wiring.
West Terre Haute, Ind.—Methodist Church destroyed.
Creston, Ia.—Palms cafe and Sidney Hotel destroyed.
Pittsburgh, Kans.—Beasley Motor Co. destroyed.
Topeka, Kans.—Garage and sporting goods store destroyed.
Buckhorn, Ky.—Witherspoon School destroyed.
Pineville Ky.—Standard Oil Co. storage depot damaged.
Presque Isle, Me.—A huge corrugated metal hangar and its contents at the Presque Isle Air Force Base, destroyed.
Buckeytown, Md.—Hudson Supply & Equip. Co. brick plt. damaged.
Glen Burnie, Md.—J. F. Johnson Lumber Co. trim shed destroyed; five other bldgs. damaged.
Boston, Mass.—Bldg. housing Joseph P. Manning Co., wholesale tobacco and G. M. C. Paper Supplies Co., damaged.
Boston, Mass.—Christ Temple Church of Personal Experience in Roxbury district, destroyed.
Lenox, Mass.—Cardinal Inn, a summer resort, destroyed.

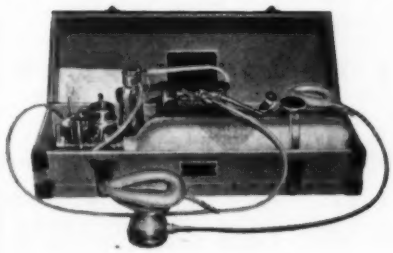
Lowell, Mass.—Grain mill of Elliott Williams, damaged.
Shrewsbury, Mass.—Lungren's Milk Processing Plt., destroyed.
South Weymouth, Mass.—Second Universalist Church, Columbian Square, destroyed. Overheated furnance.
Battle Creek, Mich.—Battle Creek Box Co. plt. in Emmett township, Calhoun County, destroyed. Coal furnance.
Benton Harbor, Mich.—Newlen Lumber Co. woodworking shop destroyed.
Cadillac, Mich.—Moutsatson restaurant, Reed and Wheaton jewelry store, R. & S. shoe store and offices occupied by Doctors George Moore, Robert Daugherty and Thomas Cardinal, destroyed. Cigarette.
Clio, Mich.—Ice cream and frozen food store, dress shop, barber shop and a 5 and 10-cent store, downtown section, destroyed. Defective wiring.
Detroit, Mich.—United Outfitting Co., a furniture store, destroyed.
Ecorse, Mich.—Pilgrim Holiness Church destroyed. Accumulation of coal gas touched off by a spark.
Highland Park, Mich.—Bldg. occupied by Daisy Shop, Fay's Style Shop, Hardy Shoe Store, United Shirt Store, Linda Lee Shop and Kinney's shoes, damaged.
Tawas City, Mich.—"Old Schmidt House" on east shore of Cedar Lake, destroyed.
Stillwater, Minn.—Clarence Olson Motor Co. and Benson Farm Supply Co., damaged.
Corinth, Miss.—Bldg. housing radio station WMCA, clothing store and jewelry firm, damaged.
Allenville, Mo.—Brennecke grocery store, local post office, service station, vacant store and dwelling, destroyed.
Kansas City, Mo.—Penrod, Jurden & Clark Co. lumber yd. destroyed.
Marshall, Mo.—H & S Motor Co.'s bldg. including 11 automobiles, destroyed.
Saco, Mo.—Mutual Oil Co. storage yd. destroyed.
St. Louis, Mo.—Chemical plt. of Tret-O-Lite Co. damaged. Explosion.
Springfield, Mo.—New Zimmerman Bldg. in downtown section, destroyed.
Geraldine, Mo.—Bldgs. on J. O. Paterson farm near Lost Lake, destroyed.
Atlantic City, N. J.—Upper floors of Strand Hotel destroyed.
Camden, N. J.—Stanley Electric Supply Co. bldg., damaged.
Jersey City, N. J.—Lehman Industrial Bldg. destroyed.
Maplewood, N. J.—Pattern storage section of Industrial Brass Foundry Co. damaged.
Newark, N. J.—Brewery plt. of Anheuser-Busch heavily damaged.
Oaklyn, N. J.—Suburban Lumber Co. damaged.
Plainfield, N. J.—Store-apt. bldg. destroyed.
Yardville, N. J.—Greenfield's Auction House on Route 130, damaged. Explosion of oil stove.
Bayard, N. M.—Meeting hall and hdqts. of Union of Mine, Mill & Smelter Workers, destroyed. Defective wiring.
Carlsbad, N. M.—Union hall of the International Union of Mine Workers, destroyed.
Deming, N. M.—City Drug Store, Vogue Dry Goods and Linrauer Men's Clothing store, destroyed; adj. Luna Theatre, damaged.
Brooklyn, N. Y.—I. Miller, furriers; J. Seigman, retail dealer in stationery and books and Sutter Theatre, damaged considerably.
Buffalo, N. Y.—Music House Bldg. destroyed.
Canastota, N. Y.—Bldg. housing bakery, vacant store and apts. in business district, destroyed. Oil stove explosion.
Corning, N. Y.—Corning Elementary School No. 1 damaged.
Dunkirk, N. Y.—Bldg. housing Clark's dairy barn. Jim's variety shop, cleaning establishment; Sherwin-Williams paint store and Rian's flower shop, destroyed.
Lynbrook, L. I., N. Y.—Lynbrook Garage destroyed.
New York, N. Y.— Bldg. occupied by Helfer King Inc., Golden Rich Dairy Products Inc. and Quality Egg Corp., considerably damaged.
New York, N. Y.—Delaware, Lackawanna & Western R. R. freight transfer station, damaged
New York N. Y.—Bldg. occupied by American Business Machines, Inc., dealers in new and used equip.; Typewriter Distributor Inc., dealers in new & used typewriters; Commercial Office Equip., Inc., dealer in new & used office equip.; A. Clemstan, dealer in new & used office equip.; Hy-Grade Slipper Co., mfrs. of play shoes; Hy-Grade Belt Co., mfrs. of ladies belts; Mile mills, mfrs. of knitwear; Tricote Corp., mfrs. of plastic novelties; A. Shapiro Inc., mfrs. of wearing apparel and Unique Sportswear Mfg. Corp., mfrs. of sportswear, considerably damaged.
New York, N. Y.—X-Ray Mfg. Corp. of America considerably damaged.
Oneida, N. Y.— The one-and two-story frame clubhouse of Oneida Country Club, destroyed.
Peterboro, N. Y.—Barn on David R. C. Smith and Arthur Williams farm, destroyed.
Syracuse, N. Y.—Apt.-business bldg. in downtown section, destroyed.

Chief, Increase Your Department's Goodwill

Your community looks to you to give it the greatest possible protection.

You can be sure that your department will save more lives when you equip it with **Stephenson Resuscitators.**

Hundreds of your fellow Chiefs have learned from experience that Stephenson Resuscitators are the most effective, simplest-to-operate and do most for the patient.



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HOWE Fire Truck Equipment Meeting Every Service Since 1872
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HALE TYPE "BL" Discharge Valve

. . . Available on All HALE Fire Pumps

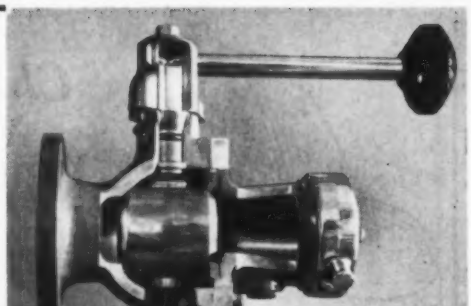
Easy-turning at all pressures, the Hale Type BL Discharge Valve can be "gated" and locked into position by a slight turn of handle to prevent creeping. The water flow is through a perfectly round waterway for low flow resistance.

Many tests have proved the valve's reliability and freedom from service troubles.

The "BL" valve is not sensitive to dirty water and will hold high pressure or vacuum. Replacement parts are inexpensive, easy to install and do not have to be "ground in." Ample handle clearance and easy turning mean freedom from "knuckle busting."

The Hale Type BL Discharge Valve is also available for installation on all HALE Fire Pumps now in service, regardless of age.

For detailed information send for Bulletin No. 293 on the Hale BL Discharge Valve.



Above—View of BL Valve cut away to show internal construction. Valve is in open position, with cap on.

OUTSTANDING FEATURES

- **Turns easily at all pressures.**
- **Will not leak at pressure or vacuum.**
- **Circular section through valve cuts flow loss.**
- **Not sensitive to dirty water.**
- **Easily serviced . . . no "grinding in."**
- **Slight twist of handle locks valve into any desired position for gating.**

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LOWEST COST per kilowatt, HIGHEST OUTPUT per pound, MOST COMPACT!

For any use . . . standby, mobile, portable or stationary, the new Onan CW-5 and CW-10 give you top performance and value! Here, for the first time, are 5 and 10KW electric plants powered by engines *designed and built by Onan exclusively for electric plant use.*

Both engines are 1800 R.P.M. Weigh less and are much more compact than general-purpose engines. Two-cylinder, alternate-firing design. New vacuum air cooling. High-tension magneto ignition. Standard voltages 60-cycle A.C.

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Onan ELECTRIC PLANTS

5713 UNIVERSITY AVENUE S.E., MINNEAPOLIS 14, MINNESOTA

Syracuse, N. Y.—Storage bldg. of Assumption Cemetery Association, destroyed. Oil burner explosion.

Troy, N. Y.—St. Marks Methodist Church in Lansingburg section of city, destroyed.

Watervliet, N. Y.—James B. Young Co., woodworking plt. and West Side Structural Steel Co. bldg., destroyed.

Whitestone, N. Y.—Whitestone Wood Products Co. and Artcraft Sink Top Corp. plt. destroyed.

Greensboro, N. C.—Kinney's shoe store and nearby stores, damaged.

Hickory, N. C.—Hickory Flour Mills destroyed.

Wilmington, N. C.—Six bldgs., including four whses., docks, piers, box cars, machinery & office equip., at the heart of Wilmington's waterfront, destroyed. Sparks from a faulty wire.

Bismarck, N. D.—North State Prison damaged.

Athens, Ohio—Bldg. eight miles west on Ohio 56, housing a confectionery, grocery, hardware shop and apts. above; barn used as whse.; Dickens garage next door; dwelling of Madge Baughman and garage behind the dwelling, destroyed.

Bowling Green, Ohio—Factory of Royal Mfg. Co., damaged. Grass fire.

Cleveland, Ohio—Commercial Induction Corp., A. A. Grinding Corp and Wykoff Machine & Tool Co., damaged.

Cleveland, Ohio—Trucking firm whse. of Wilson Forwarding Co. and Wolverine Express Co. damaged.

Cleveland, Ohio—Swanee Barbecue, Inc.; Allied Decals and Hough Furniture Co., damaged.

Columbus, Ohio—Dwelling of Howard N. Pangle destroyed.

Columbus, Ohio—Shepard Auto Service Shop damaged.

Granville, Ohio—College town house at Denison University, destroyed.

Springfield, Ohio—Business bldg. in downtown section, destroyed.

Xenia, Ohio—Swigert Garage damaged.

Youngstown, Ohio—Beat Dry Cleaners Shop and Dom Perry Tailors, damaged. Kerosene stove.

Youngstown, Ohio—Whse. under construction by M. De Bartolo Construction Co., damaged.

Lone Wolf, Okla.—Barber shop and five business houses in business district destroyed.

McAlester, Okla.—John Haddock Buick Agency in business section, destroyed. Arson.

Owaso, Okla.—Commercial Lumber Co. destroyed.

Pineville, Ore.—Pat's Waldorf Cafe and Ryan apt. bldg. destroyed. Smoker's carelessness.

Portland, Ore.—M. Rogers Antique Shop destroyed.

Wemme, Ore.—Hood Chalet Restaurant and General Store destroyed. Overheated oil stove.

Collingdale, Pa.—Shallcross Mfg. Co. destroyed.

Franklin, Pa.—S. T. Karns Transportation Co. whse. destroyed.

Ithan, Pa.—Dwelling of J. Richard Jordan Sproul, destroyed.

Meshoppen, Pa.—Drug store and restaurant and apts. above, destroyed. First National Bank and offices of Commonwealth Telephone Co. damaged.

Smithfield, R. I.—Leblanc's Steak House on Douglas Pike, destroyed.

Greenville, S. C.—Mather Furniture Co., Friedman's Jewelers and Men's Wear Army store, damaged.

Jonesville, S. C.—Jonesville Hotel damaged.

East Chattanooga, Tenn.—Campbell Hosiery Mill destroyed.

Amarillo, Tex.—American Uniform Co. store in downtown section, destroyed. Carelessly thrown cigarette.

Dallas, Tex.—Frederick Poultry & Egg Co. destroyed.

Fort Worth, Tex.—Johnson-Campbell Lumber Co. destroyed.

Houston, Tex.—Snack Bar at Ellington Air Force Base, destroyed.

Houston, Tex.—Playland Park damaged.

Park City, Utah—Fritch Garage destroyed. Defective electric wiring.

Batesville, Va.—Miller School dairy barn, 12 miles out, Albemarle County, destroyed.

Harrisonburg, Va.—Charles Brock's Bowling Alley, destroyed; S. Denton & Sons branch furniture store, Harrisonburg Telephone Co. and Harrisonburg Masonic Hall, damaged.

Honaker, Va.—Bldg. housing Central Market, A. T. Street Dept. Store and the Jefferson Theatre, destroyed.

Quantico, Va.—Classroom bldg. at Marine Corp. school damaged.

Waynesboro, Va.—Three bldgs. in business district of Shenandoah Valley city, housing bldg. supply firm, flour mill and hardware store, destroyed; cleaning establishment, two restaurants, swap shop, service station and bldg. which once housed a laundry, damaged.

Seattle, Wash.—General Machinery Co. damaged.

Tacoma, Wash.—Fred G. Gerrish Machinery Co. destroyed.

Dawes, W. Va.—Pure Oil genl. machine shop on Cabin Creek, destroyed.

Huntington, W. Va.—Bldg. housing Betty Gay Shop, Alfred's Shoe Store and adj. Anderson Newcombe Co. dept. store, damaged. Circulating gas heater.

Boyceville, Wis.—Genl. store owned by Ivar Erickson destroyed.

Green Bay, Wis.—Uncompleted addition of H. C. Prange dept. store destroyed.

Green Bay, Wis.—Nitrate fertilizer plt. of Northwest Co-operative Mills, destroyed.

South Milwaukee, Wis.—Milwaukee Equip. Mfg. Co.'s bldg. destroyed.

Prince Rupert, B. C.—King George Apt. Hotel destroyed.

Fork River, Man.—J. J. Solomon's implement & garage business and M. J. Harrison's hardware implement and garage premises, destroyed.

Moncton, N. B.—Whse. of T. Eaton Co., Ltd., destroyed.

Halifax, N. S.—Sprawling machine shop of Halifax shipyards, destroyed.

Arnprior, Ont.—Ayling & Ramage boat bldg. firm destroyed.

Bruce Mines, Ont.—Bruce Mines Creamery, Bye's Farm Implement Co. and H. L. Triete's Groceria, damaged.

Fitzroy Harbor, Ont.—Chats Falls Powerhouse destroyed.

Fort Erie, Ont.—Gould Battery plt. destroyed.

Kingston, Ont.—Hardware whse. of W. B. Dalton & Sons, destroyed.

Norwood, Ont.—Norwood United Church destroyed.

Oakville, Ont.—Trafalgar Arms Hotel, 20 miles southwest of Toronto, destroyed.

Orillia, Ont.—National Grocers Co., Ltd., whse. damaged.

Toronto, Ont.—Bldg. housing machinery stored by a soft drink company, electrical mfg. firm and dress designing company, destroyed.

Montreal, Que.—Rice storage whse. in Canadian Pacific Railway Co. Hoghelaga yds., destroyed.

Montreal, Que.—Bldg. housing hardware store and apts., damaged.

Riviere de Prairies, Que.—Dwelling of Lionel Masse and Lussier garage, destroyed.

St. Joseph d'Alma, Que.—Whse. of Aluminum Co. of Canada, Ltd., at Chute du Diable, 30 miles north, destroyed.

Costly Wilmington, N. C., Fire

The costliest fire in Wilmington's history (pictured on this month's cover) caused damage variously estimated at from $10 million to $13 million. It raged through the waterfront on March 10, fanned by a stiff wind, setting off explosions which shook the city of 45,000. It was finally controlled after an all-day battle by six local fire companies and its fireboat, Atlantic III aided by men and apparatus from Fort Lejeune; Fort Bragg; Whiteville; Chadbourn; Winter Park; Carolina Beach; Kure Beach, Wrightsville Beach and Wrightsboro. The Coast Guard sent a trailer pump with crewmen of the cutter Mendota. Two tugs and a patrol boat from the Wilmington Reserve Cargo Fleet also aided.

The first alarm came at 8:55 A.M. and, at 9:15 A.M., Fire Chief J. Ludie Croom sounded a general alarm. The fire, believed caused by sparks from an electric wire, started in the Wilmington Terminal Warehouse Company's mammoth brick and wood dual building; quickly involved the structure, feeding on nitrate of soda, to jump the waterbreaks to other warehouses, structures about 150 to 200 ft. long, 75 ft. wide by 30 ft. high. By 10:30 A.M. Seaboard Warehouses "E" and "D" were enveloped by flames, as were "B" and "C." At 10:30 A.M. and 10:40 A.M. two blasts of burning nitrate, wet by hose streams, ripped the area, driving back fire fighters, scorching apparatus, and necessitating abandonment of 2,000 feet of hose.

Contents of the warehouses and a dozen freight cars, which were burned, included sugar and tobacco as well as ammonium nitrate and nitrate of soda. The Norwegian freighter Max Manus, which was unloading freight at the warehouse in which fire originated, was safely towed into the Cape Fear River. At one time Chief Croom considered the advisability of resorting to dynamite to prevent extension of the roaring, smoky fire.

For booster and high pressure fog lines

There are four good reasons why the fire fighters specify BAR-WAY couplings. Four reasons why BAR-WAY couplings are growing in favour with firemen, hydraulic engineers and others who insist on the best.

- **SAFETY**—The coupling becomes the *strongest part of the hose line.* Tested to 3000 pounds pressure and 500 pounds pull.
- **FULL FLOW**—No suppression of flow in coupling. No shrinkage of hose at coupling.
- **FLEXIBILITY**—Reels smoother. Easily replaced. Nothing to catch on corners or underbrush.
- **BETTER MADE**—Accurately machined, always the same, interchangeable. WILL NOT FAIL

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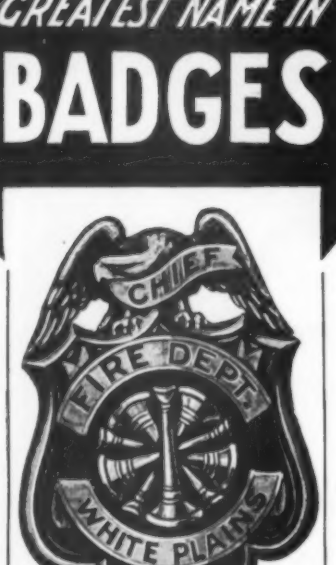

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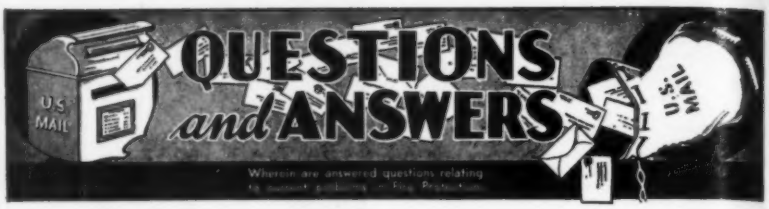

Wherein are answered questions relating to current problems in Fire Protection

Features of Fire Streams

To the Editor:

Every fire officer should be thoroughly familiar with the rules and principles which have been commonly accepted as governing the proper and effective direction of fire streams.

A few years ago you published a list of these in one of your magazines. I believe there were 30 of these rules and principles in the list you published. H. A. G.

Answer: We have checked back through the bound volumes of FIRE ENGINEERING for several years, but are unable to locate the rules governing the proper and effective direction of fire streams which you believe we published some time ago.

However, the following information taken from "Fire Service Hydraulics" and from the "New York Fire College Course" may be of some service to you.

From "Fire Service Hydraulics," the following is reproduced:

"The quality of a fire stream depepds directly upon the pressure at the nozzle and the form of nozzle used.

"By good fire streams are meant streams which carry the calculated distance, retaining to a reasonable extent their solidity and without excessive spray. Experience has shown that in large hot fires a small stream may be evaporated as it falls in spray through the flames, while, if a large stream is thrown, enough may escape the evaporation to pass through the heated gases and reach the burning coals themselves. John R. Freeman, C. E., after exhaustive tests on streams from nozzles, set forth the following specifications for a good fire stream, which, up to the present, have been considered as outlining fairly well the requisites of such a stream.

"(a) A stream which at limit named has not lost continuity of stream by breaking into showers of spray.

"(b) A stream which up to the limit named appears to discharge nine-tenths of the whole volume of water inside of a circle 15 inches in diameter, and ¾ of it inside a 10-inch circle.

"(c) Which is stiff enough to attain in fair condition the height or distance named, even though a fresh breeze were blowing.

"(d) Which at limit named will, with no wind, enter a room through a window-opening and barely strike ceiling with force enough to spatter well.

"From the above it is evident that with a certain named limit the stream may be good, while at another, it may be poor. For instance, a stream which holds its solidity for a distance of 50 feet may be completely broken up at 75 feet."

And from the "New York Fire College Course," the following is reproduced:

"Remember, the target is your fire and your ammunition is the water. If it is possible to do so, cover the whole of the target quickly, and where a floor, no matter what the type of structure be (liquid fires excluded), is fully involved with fire, see that the stream is entering the building at an angle such as to cover all or as much as possible of the floor, using the ceiling as a deflector, and shifting the nozzles right or left. If a floor in a commercial or factory building is involved with fire throughout its entire area, and its stock is a combustible one in cases, on shelves, or in piles, the stream should be so directed that it strikes the ceiling above and the water is deflected down on the burning materials.

"At such fires the heat generated is sometimes unbearable, and the men in making an effort to advance on the floor assume a stooping position, or a kneeling position. In the majority of such cases the nozzle is so lowered that the water strikes the bottom or base of the piles on the floor and never reaches the seat of the fire. Men in taking a line in on such a floor find they receive less punishment if they keep their faces close to the nozzle, for the water tends to cool off the atmosphere in its immediate vicinity. But they should not lose sight of their object when looking after their own comfort, for if the stream does not reach, its progress will be checked.

"Deflecting of streams from the ceiling applies especially to cases where contents on floors consist of light materials. Heavy streams in such instances are not necessary. If the floor is stocked with high piles of light pasteboard boxes, garments, etc., this practice is doubly effective, for the water comes down on the top of the boxes or materials and gets right at the seat of the fire. It should be remembered that the discharge from one ordinary stream produces a very large flow of water. If the discharge is 250 gallons per minute, then approximately a ton of water is being discharged per minute on the fire. Five such streams would mean five tons per minute, or 300 tons per hour. The quantity of water required to extinguish a fire in light materials is comparatively small if it is properly distributed, while water loss from carelessly handled streams may be very large.

"Regarding the use of nozzles, a controlling nozzle should be used at all times when working in a building where it is apparent that there will be considerable shifting of the line. Whether entering the floor of a commercial building, a loft building, a store, a flat house, a tenement or an apartment house, do not be too anxious to open the nozzle. Where there is a great deal of smoke, but no great amount of heat, water should not be used until the fire is located. By waiting until the fire is seen, a considerable amount of unnecessary water damage may be avoided. A delay of a few seconds may give the smoke time enough to break and dis-

close the seat of the fire. Shut off the line as quickly as possible when not needed. Do not keep it playing after the fire no longer requires it. Minimize the use of water as much as possible, and thereby minimize the water damage. Use reducing tips as early as conditions will permit."

Friction Loss Factors

To the Editor:

Would you please give me the friction loss factors, for 2½-inch hose, for the following sizes? These are not listed in your book "Fire Service Hydraulics," Page 151.

Two lines 2½-inch hose	Three lines 2½-inch hose
	1¼
1⅜	1⅜
1⅝	1½
	1⅝
	1¾
	1⅞
	2

The table to which I refer presents factors by which friction loss may be determined approximately for different sizes of nozzles and different diameters of hose.

For any given nozzle pressure, the factors give fairly accurate figures for friction loss per 100 feet of 2½-inch hose for the size of nozzle used and the nozzle pressure employed.

For example, if a single line of 2½-inch hose is being used, and if the nozzle is 1-inch in diameter, the friction loss will be ⅕ of the nozzle pressure, or if a 1-⅛-inch nozzle is being used on the same line, the friction loss per 100 feet will be ⅓ of the nozzle pressure. Likewise, where a 1-¼-inch nozzle is being used, the friction loss per 100 feet of hose will be ½ of the nozzle pressure.

A. C.

Answer: Below are given friction loss factors for two parallel lines and three parallel lines of 2½-inch hose with different size nozzles.

2—2½" LINES

Nozzle Diameter	Factor
1⅜"	1/5
1⅝"	2/5

3—2½" LINES

Nozzle Diameter	Factor
1¼"	1/16
1⅜"	1/11
1½"	1/8
1⅝"	1/6
1¾"	3/14 (approx. 1/5)
1⅞"	2/7
2"	5/14 (approx. 1/3)

N. C. Towns Plan Fire Department

Citizens of Robinson and Hickory Grove communities in North Carolina have completed initial steps for organizing a volunteer fire department for their area.

Eugene Rushing was elected chairman for the work of initiating the drive. The membership on the board includes Randolph Baker, Bill Maye, Edward Jordan, Howard Caldwell, J. W. Biggers and Ralph Miller.

D. G. SPENCER.

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for DISASTER, for DEFENSE

With a distinguished record of use by the medical services of the Armed Forces, by other governmental agencies, by hospitals, by emergency and disaster units, by industrial clinics and first-aid stations . . .

. . . always STERILE, always READY for immediate and easy application to dress a burn, an abrasion, and other surface injuries.

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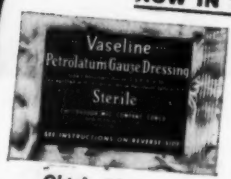

No. 1: 3" x 36" (6 in carton)
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have been adopted by surgeons as standard procedure, by nurses as preferred matériel, by professionally-trained aid personnel as the compact, ready-made, ready-to-apply dressing of their choice.

Specify these superior dressings in the foil-envelopes to your supplier.

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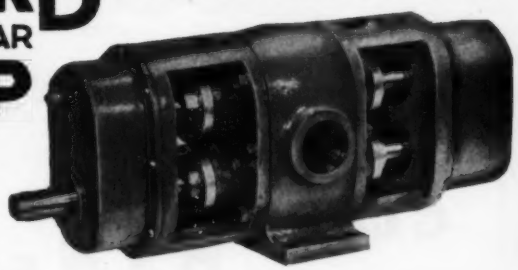
A NEW AND BETTER FIRE APPARATUS PUMP!



YOUR best buy because of longer service life . . . lowest cost per year. Shafts mounted on Timken Bearings eliminate wear, suction and pressure loss. Delivers 150 GPM at 150 lbs. Designed to take hard fire service. It's "the pump you can't wear out."

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ATTWOOD HARDWARE

Fire fighting is an exacting occupation. One mistake may be the last.

Likewise, the manufacture of fire fighting trucks is a very exacting business. Every piece of equipment must be dependable to eliminate any chance of mechanical failure.

For many years Attwood has supplied over 90% of the fire equipment manufacturers with standard and special hardware and fittings.

Contact Attwood regarding the manufacture of equipment to your specifications.

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FLEXIBLE

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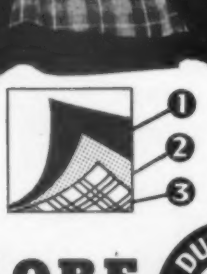
The Globe Suit Coat has a Hockmeyer Corduroy collar, 100% wool wristers in sleeves, arm shields, two pockets with patent stays and other exclusive features. It's light in weight, giving you full freedom of action. Get the facts from your dealer today, or write us for our latest catalog.



HERE ARE THREE GARMENTS IN ONE

(1) A special duck woven to take the rough usage fire fighting demands, (2) an interlining made with 100% Du Pont Neoprene, and (3) your choice of a wool or flannel lining. All these blend into the one fine firemen's suit.

GLOBE DURABLE FIREMEN'S SUITS

GLOBE MANUFACTURING CO. PITTSFIELD, N. H.

Among the Buffs

By Paul C. Ditzel

MY TALENTS—if any—lie strictly along the writing line. When it comes to tinkering with tools on handicraft jobs I'm like a fireman trying to operate a 3½-inch line all by his lonesome.

However, a New York manufacturer has just come out with a line of old-time horse-drawn fire equipment. The models are all built to ¼-inch scale which is handy for your model railroads, if you're also a railfan, as I used to be.

The manufacturer, Jack Robinson, of the Marlin Toy Company, 1186 Broadway, New York 1, N. Y., tells me that three kits already are available at your local model dealers and three more will be available late this summer.

The line is trade marked as the "American Firefighters Series." The kits are all plastic, easily built (even I was able to put the steamer together) and are retailed for 89 cents apiece here on the West Coast.

Kits available now include a steamer, a replica of one of the many outstanding double pumper steamers built during the second half of the 19th century. This rig was widely used for many decades in all large cities. The overall length of the finished model is 7¼ inches.

As a fire fan—and a model fire engine fan for some time—I've always felt my inability to do a good job on other lines of model kits which have been placed on the market from time to time. One line of models gave high promise but when I tried to build one of the kits I found the blueprints were thoroughly inadequate. The complete kit took me many months to build and was not a pleasure. After a while, the construction of the kit became a challenge instead of a hobby. I finally finished it, but Brother Robinson's models have past offerings beaten by several lengths of hoseline.

Mr. Robinson's kits have plenty of detail in them and should satisfy even the most expert model builders such as my good friend Capt. Thomas Showers, who knows no peer when it comes to building fire engine models. Tom also tells me he's quite enthusiastic over the new kits.

Also available is a chemical and ladder wagon. These rigs were built during the latter part of the last century and were considered necessary units in all small cities. The third model now at your dealer's is a hose reel, a very famous piece of equipment used for many years before it was mounted on a horse drawn cart. Every fire department took great pride in ornamenting these rigs. Your fire history books will tell you that a very important and often turbulent event was the selection of designs, coloring and decorations of these colorful hose reels.

The new models will be joined by three others late in the summer: a hook and ladder, a water tower (water tower expert Willard R. Smith please note) and an aerial ladder.

"We have tried to make these models as authentic as possible and still keep them simple for easy assembly and within the low-cost range," says Mr. Robinson. For my money he's done a

New Head of Montreal Auxiliary Firemen

George Goldfarb (left) of Montreal, manufacturer of pants, and newly elected president of the Montreal Auxiliary Firemen, shakes hands with retiring president Armand Lazure, engineer, after the annual meeting held at headquarters of the MAF. The latter was founded seven years ago, now has membership of over 50.

superb job on these first models and if his later kits are as good, they'll certainly ring the fire gong.

Speaking of fire gongs, here's one about Harold Becker, Buffalo, N. Y., Fire Commissioner, who really rang the alarm from his own office high up in Buffalo's City Hall, itself a skyscraper.

An alarm of fire was turned in for a boiler works on Illinois St., near the downtown area, at 9:52 a.m. The alarm tapped in in a register in Commissioner Becker's office. He looked out the window of his 24th floor office and ordered a second alarm immediately. Flames and smoke were really rolling up!

The second alarm was being tapped out before the first alarm equipment had even reached the blaze. Commissioner Becker's eagle eye and his quick sounding of the second alarm kept the blaze to a minimum.

Your friendly correspondent also had his ink-stained thumb on the hook recently. I was on a routine assignment to Los Angeles' new Statler Hotel. I was in the lobby when the pungent smell of smoke started filling the place.

The bell captain and others seemed bewildered and, when I made queries, I found that the fire department was not on the way. I was a witness to the famous LaSalle Hotel fire in Chicago and I knew the story of the delayed fire department notification there.

A few seconds after I turned in the alarm, the boys were rolling up to the front door of the hotel. Firemen found the fire and quickly doused it before too much damage was done.

Thanks for all your friendly and encouraging letters. Wish I had time to answer all of them immediately. Next time you hear a good fire anecdote why not share it with the rest of us. The address: 1246 Tamarind Ave., Hollywood 38, Calif. If you get up early enough—4:30 a.m. or thereabouts—you'll find me pulling in to work on the rewrite desk of the Los Angeles Daily News.

Blackwell, Okla., Losses Down

Unusual feature of the Blackwell, Okla., Fire Department Annual Report for the Year 1952 (Fire Chief Geo. E. Gebelein) is its narrative presentation of day-by-day doings of the department, which answered 184 alarms, 27 of them for fires that developed loss. Total loss for the year was $6800.00, a reduction from 1951.

The Report shows the volunteer force ran 310 miles, or 3,281 blocks—many responses being to rural areas.

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Rescue Cars

Today's trends demand equipment built to individual specifications

Public safety departments nowadays are taking a new look at emergency units, squad cars, and all types of rescue equipment. The possible requirements of civil defense cannot be overlooked. The varying specialized needs of the large city, suburban area or semi-rural community must be kept in mind. Gerstenslager Rescue Cars built to individual specifications give each individual safety department the exact type of vehicle needed to cope with the important emergencies it must be prepared to meet.

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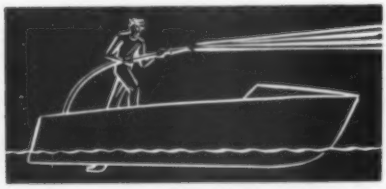
TO FIRE FIGHTERS



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For further details and specifications write to—

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A subsidiary of Barium Steel Corp.

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COMBINATION
EXPANDER
6 FEATURES IN 1
Expander for Hose Sizes from
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Greater Expansion Greater Economy
Easy to operate
Segments Furnished with Adjustable Spacer
Visual Indicator to Determine Amount of Expansion
BE PREPARED FOR ANY EMERGENCY
THE COST IS LOW
Send for Illustrated Bulletin
Dayton Fire Equipment Co.
1242-48 W. 2nd St., Dayton 7, Ohio

Convention Dates

Apr. 20-24—OKLAHOMA FIRE COLLEGE. Annual short course. Ponca City, Okla. Director, Professor R. J. Douglas, Fire Protection Department, School of Technical Training, Campus Fire Station, Stillwater, Okla.

Apr. 26 — NEBRASKA REGIONAL FIRE SCHOOL, Crete, Neb. Secretary, Russell D. Salak, P. O. Box 312, Schuyler, Neb. School Director, Otto B. Johannes, Columbus, Neb.

Apr. 27-May 1 — ARSON INVESTIGATORS' SEMINARY. Annual meeting, Purdue University. Director, J. L. Lingo, Director, Public Safety Institute, Purdue University, Lafayette.

Apr. 27-May 1—MINNESOTA STATE FIRE SCHOOL. Annual meeting. Agricultural School of the University of Minnesota, St. Paul, Minn. Chairman, Dr. J. O. Christianson, Superintendent, School of Agriculture, University of Minnesota, St. Paul, Minn.

May 1-July 1—CALIFORNIA TECHNICAL INSTITUTE OF FIRE TRAINING. Meetings in Sacramento, Oakland, Fresno, Los Angeles and San Francisco. For information, contact the Director, Thomas S. Ward, Supervisor of Fire Training, State Department of Education, Sacramento 14, Cal.

May 3 — NEBRASKA REGIONAL FIRE SCHOOL, Beemer, Neb. Secretary, Russell D. Salak, P. O. Box 312, Schuyler, Neb. School Director, Otto B. Johannes, Columbus, Neb.

May 3—HEART OF THE NORTH FIRE ASSOCIATION and POLK COUNTY FIREMEN'S ASSOCIATION. Joint fire school, Amery, Wis. For information, contact M. K. Steensland, President, Amery, Wis.

May 11-12—SOUTHWESTERN ASSOCIATION OF FIRE CHIEFS. Annual meeting, Oklahoma City, Okla. Secretary-Treasurer. Dr. B. J. Barrodale, Houma, La.

May 11-13 — NORTH DAKOTA TEACHER-TRAINER FIRE SCHOOL. Annual meeting, Wahpeton, N. D. Director, Roy W. Johnson, Training Supervisor, Hillsboro, N. Dak.

May 11-15—FLORIDA STATE FIRE COLLEGE. One of four sessions to be held at Ocala, Fla. Director, J. W. Barnett, Superintendent, P. O. Box 785, Ocala, Fla.

May 12-13 (tentative)—WESTERN KENTUCKY FIREMEN'S TRAINING ASSOCIATION. Annual meeting, Princeton, Ky. Secretary, Robert D. Beaty, 820 Crittenden St., Owensboro, Ky.

May 17—NEBRASKA REGIONAL FIRE SCHOOL, Broken Bow, Neb. Secretary, Russel D. Salak, P. O. Box 312, Schuyler, Neb. School Director, Otto B. Johannes, Columbus, Neb.

May 18-21—INDIANA FIRE SCHOOL. Annual meeting, Purdue University, Lafayette, Ind. Director, J. L. Lingo, Director, Public Safety Institute, Purdue University, Lafayette, Ind.

May 18-21—IOWA FIRE SCHOOL. Annual meeting, Iowa State College, Ames, Iowa. For information contact Mark Brosier, Supervisor of Firemanship Training, Iowa State College, Ames, Ia.

May 18-22—NATIONAL FIRE PROTECTION ASSOCIATION. Annual meeting, Chicago, Ill. General manager, Percy Bugbee, 60 Batterymarch Street, Boston 10, Mass.

May 18-22—ALABAMA STATE FIRE SCHOOL. Annual meeting, University of Ala., University, Ala. Sponsored by Vocational Industrial Education Service, State Department of Education, Alabama State Firemen's Association. Alabama Association of Fire Chiefs in cooperation with the University of Alabama, College of Education; Alabama League of Municipalities, Industrial organizations and the City of Tuscaloosa.

May 18-23—CONNECTICUT FIRE COLLEGE. Annual meeting, New Haven, Conn. Director, L. W. Eddy, Supervisor, Service Training, State Department of Education, 490 Capitol Avenue, Hartford, Conn.

May 20-22 (tentative)—EASTERN ASSOCIATION OF FIRE CHIEFS. Annual meeting, New York City. Secretary, Chief Edward Clark, Box 271, Wayne, Pa.

May 23-24—OHIO REGIONAL FIRE SCHOOL. Regional meeting, Orrville, Ohio. Director, W. T. Banning, State Field Instructor, State Board for Vocational Education, 606 4th Street N. W., New Philadelphia, Ohio.

May 24—NEBRASKA REGIONAL FIRE SCHOOL. Alliance, Neb. Secretary, Russell D. Salak, P. O. Box 312, Schuyler, Neb. School Director, Otto B. Johannes, Columbus, Neb.

May 27-29—OHIO FIRE BRIGADES ASSOCIATION. Annual Conference and School, Columbus, Ohio. Secretary, W. F. Ballard, c/o Columbus Coated Fabrics Co., Columbus, Ohio.

June 1-5—SOUTH DAKOTA FIRE SCHOOL. Annual meeting, Sioux Falls, S. D. Secretary, Robert W. Hanigan, Box 423, Pierre, S. D.

June 2-4—SOUTHEASTERN ASSOCIATION OF FIRE CHIEFS. Annual meeting, Valdosta, Ga. Secretary-Treasurer, Chief G. A. Mitchell, Opelika, Ala.

June 7—NEBRASKA REGIONAL FIRE SCHOOL. Ainsworth, Neb. Secretary, Russell D. Salak, P. O. Box 312, Schuyler, Neb. School Director, Otto B. Johannes, Columbus, Neb.

June 6-8—NEW MEXICO STATE FIREMEN'S ASSOCIATION. Annual meeting and fire school, Raton, N. M. Secretary, F. W. Wynn, Hobbs, N. M.

June 9-11—KENTUCKY FIRE SCHOOL. University of Kentucky, Lexington, Ky. Chairman, Fire School Committee, John L. Thompson, Kentucky Inspection Bureau, Louisville.

June 12-16—FLORIDA STATE FIRE COLLEGE. One of four sessions to be held at Ocala, Fla. Director, J. W. Barnett, Superintendent, P. O. Box 785, Ocala, Fla.

June 14—NEBRASKA REGIONAL FIRE SCHOOL. Gothenburg, Neb. Secretary, Russell D. Salak, Box 312, Schuyler, Neb. School Director, Otto B. Johannes, Columbus, Neb.

June 14-17—NEW YORK STATE ASSOCIATION OF FIRE CHIEFS. Annual meeting, Watertown, N. Y. Secretary-Treasurer, Chief Henry F. Drake, Clinton Corners, New York.

June 15-18—ILLINOIS FIRE COLLEGE. Annual meeting, Smith Music Hall, University of Illinois, Champaign-Urbana, Ill. Secretary, R. W. Alsip, Box 8, Champaign, Ill.

June 17-20—COLORADO STATE FIREMEN'S ASSOCIATION. Annual meeting, Pueblo Colo. Secretary, Arthur J. Becker, 4250 Stuart Street, Denver 12, Colo.

June 18-20—HUDSON VALLEY VOLUNTEER FIREMEN'S ASSOCIATION. Annual meeting, Lake George, N. Y. Secretary, Charles M. Fales, 92 Clove Avenue, Haverstraw, N. Y.

June 18-20—SALT LAKE CITY FIRE DEPARTMENT ANNUAL FIREMEN'S TRAINING SCHOOL. Annual meeting, Roosevelt Junior High School, Salt Lake City, Utah. Sponsored by Salt Lake City Fire Department, Salt Lake City Area Vocational Training School and the Utah Department of Industrial Education. Director, Assistant Chief D. E. White, 144 East First South, Salt Lake City, Utah.

June 22-25—NEW ENGLAND ASSOCIATION OF FIRE CHIEFS. Annual meeting. Wentworth-by-the-Sea, Portsmouth, N. H. Secretary-Treasurer, Chief John W. O'Hearn, 206 Mt. Auburn Street, Watertown, Mass.

June 22-27 — MISSISSIPPI STATE FIRE SCHOOL. Annual meeting, Mississippi State College, State College, Miss. Sponsored by Mississippi State College, State Department for Vocational Education and the Mississippi State Firemen's Association.

June 23-26—MICHIGAN FIRE SCHOOL. Annual meeting. University of Michigan. Ann Arbor, Mich. Director, M. D. Whale, c/o Department of Public Instruction, Office of Vocational Education, P. O. Box 928, Lansing.

June 25-27 — SASKATCHEWAN ASSOCIATION OF FIRE CHIEFS. Annual meeting, Saskatoon, Sask. Secretary-Treasurer, Chief G. M. Beach, Weyburn, Sask.

July 8-11 — WASHINGTON STATE FIRE SCHOOL. Annual meeting, Aberdeen, Wash. Director, Captain R. J. Cook, Assistant State Supervisor of Fireman Training, P. O. Box 250, Olympia, Wash.

July 11-12—JEFFERSON AND WAUKESHA COUNTIES FIREMEN'S ASSOCIATION. Annual tournament, Jefferson, Wis. For information contact Chief John H. Zeh, 1110 Elizabeth Street, Jefferson, Wis.

July 13-15—MISSOURI VALLEY ASSOCIATION OF FIRE CHIEFS. Annual meeting. Omaha, Neb. Secretary-Treasurer, Chief Ray Tiller, 319 East 5th Street, Waterloo, Ia.

July 16-18—"F" ASSOCIATION FOR FORMER U. S. NAVY, COAST GUARD AND MARINE CORPS FIREFIGHTERS. Annual meeting. Muncie, Ind. Secretary-Treasurer, William J. Mignery, Ontonagon, Mich.

July 20-24—FLORIDA STATE FIRE COLLEGE. One of four sessions to be held in Ocala, Fla. Director, J. W. Barnett, Superintendent, P. O. Box 785, Ocala, Fla.

July 20-24—WEST VIRGINIA STATE FIRE SCHOOL. Annual meeting, West Virginia University, Morgantown, W. Va. Director. R. E. Hanna, Jr., Fire Service Extension Schools, West Virginia University, Morgantown, W. Va.

July 21-24—DELAWARE SHORT COURSE FOR FIREMEN. Annual meeting, Dover, Dela. Director, A. B. Anderson, Assistant State Director for Vocational Education, 511 W. 8th Street, Wilmington, Dela.

July 21-24—MARITIME FIRE CHIEFS AND NEWFOUNDLAND FIRE CHIEFS. Annual meeting, Kentville, Nova Scotia. Chief B. R. Wade, Chairman, Program Committee, P. O. Box 413, Kentville, N. S.

Convention Dates

July 27-30—MISSOURI FIRE SCHOOL. Annual meeting, University of Missouri, Columbia, Mo. For information, contact J. I. Fetters, Administrative Associate, Adult Education and Extension Service for Firemanship Training, University of Missouri, Columbia.

Aug. 1-2—OHIO FIRE SCHOOL. Regional school, North Canton, Ohio. Director, W. T. Banning, State Field Instructor, State Board for Vocational Education, 606 4th Street N. W., New Philadelphia, Ohio.

Aug. 10-12—WISCONSIN FIRE SCHOOL. Annual meeting. University of Wisconsin, Madison, Wis. Director, J. J. Lichty, Bureau of Community Development, Madison 6, Wis.

Aug. 18-19—FIREMEN'S ASSOCIATION OF THE STATE OF NEW YORK. Annual meeting, Binghamton, N. Y. Secretary, Eugene M. Braun, 4025 Main Street, Buffalo 21, N. Y.

Aug. 21-25—FLORIDA STATE FIRE COLLEGE. One of the four sessions to be held in Ocala, Fla. Director, J. W. Barnett, Superintendent, P. O. Box 785, Ocala, Fla.

Aug. 24-28—TEXAS FIREMEN'S TRAINING SCHOOL. Annual meeting, Texas A. & M. College, College Station, Tex. Director, H. R. Brayton, Fire Service Training, A. & M. College, College Station, Tex.

Aug. 24-28—TENNESSEE STATE FIRE SERVICE SCHOOL. Annual meeting, Middle Tennessee State College, Murfreesboro, Tenn. Director, W. A. Seeley, State Supervisor, Trade & Industrial Training, 202 War Memorial Building, Nashville, Tenn.

Aug. 26-29—MONTANA STATE FIREMEN'S SCHOOL. Annual meeting, Polson, Mont. Director, Clayton Brown, Polson Volunteer Fire Department.

Sept. 8-10—PACIFIC COAST INTER-MOUNTAIN ASSOCIATION OF FIRE CHIEFS. Annual meeting, Tacoma, Wash. Secretary-Treasurer, Jay W. Stevens, Merchants Exchange Building, San Francisco, Cal.

Sept. 8-11—OHIO STATE FIRE SCHOOL. Annual meeting, Port Columbus Naval Air Station, Columbus, Ohio. Director, Foss H. Gragg, Deputy State Fire Marshal, 607 Wyandotte Building, Columbus 15, Ohio.

Sept. 8-11—MARYLAND SHORT COURSE FOR FIREMEN. Annual meeting, University of Maryland College Park, Md. Director, Robert C. Byrus, Fire Service Extension, University of Maryland, College Park, Md.

Sept. 14-18—VIRGINIA STATE FIRE SCHOOL. Annual meeting, Number 9 Fire House, Norfolk, Va. For information, contact Fire Marshal Clay A. Easterly, Director, P. O. Box 1112, Martinsville, Va.

Sept. 14—CANADIAN ASSOCIATION OF FIRE CHIEFS. Annual meeting, Toronto, Ont. Secretary-Treasurer, Chief Allan Clark, Fire Headquarters, Lakefield, Oont.

Sept. 15-18—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. Annual meeting, Toronto, Ont. Secretary-Treasurer, Chief Daniel B. Tierney, 8 Robbins Road, Arlington 74, Mass. General Manager, James E. Jagger, Hotel Martinique, Broadway and 32nd Street, New York 1, N. Y.

Oct. 20-23—KANSAS STATE FIRE SCHOOL. Annual meeting, University of Kansas, Hutchinson, Kans. Director, Gerald Pearson, Director Extension Classes, 111 Fraser Hall, University of Kansas, Lawrence, Kans.

News of the Manufacturers

(*Continued from page 308*)

An electronic tone broadcast by the Franklin County Sheriff's department radio transmitter, several miles from Columbus, activates the county's sirens by means of special receivers attached to each siren. For the new alerting system, the Sheriff's transmitter is remotely controlled from the Columbus Fire Department.

All volunteer fire departments in Franklin County, as well as deputy sheriffs, are on the frequency of the Sheriff's radio network. The large number of fire and emergency vehicles equipped with radio-telephones in this network is the reason the Sheriff's transmitter was chosen to operate the alerting system.

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NEW HOSE DRYING MANUAL TELLS HOW TO DRY, STORE AND CONSERVE FIRE HOSE

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SHUT-OFF NOZZLE
and PLAYPIPE
COMBINATION
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The World's Finest
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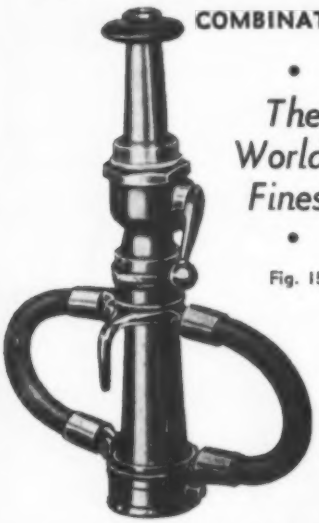

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PORTABLE ELECTRIC HAND LAMPS

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2000-foot beam
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Persons in the News

Summerlin of Mount Olive Honored

E. S. Summerlin, former Fire Chief of the Mount Olive, N. C., Volunteer Fire Department, is 71. He retired as head of the organization (in August, 1951), but he's still one of the most active of the "young oldsters" when it comes to maintaining his interest in the department. Incidentally, this activity is whetted a bit by the fact that his son George is Captain in the same department.

Senior Summerlin was a charter member of the Mount Olive V.F.D., which was formed in 1904. At that time he was named captain, which office he held until the death of Chief M. T. Breazeale in 1922, whereupon he was elected Chief.

Upon Chief Summerlin's retirement, he was tendered a banquet by the Department, the City Fathers and many guests. The Department named him Chief-Emeritus, presented him with a gold watch and a miniature hook and ladder truck with "No. 4" inscribed thereon, saying that would always be the "No. 4 piece of equipment in the Mount Olive Fire Department." But that wasn't all. To his wife they gave a setting of china for eight. The climax came when city officials gave the good chief the keys to a new Plymouth sedan.

State Fire Marshal Sherwood Brockwell presented the Chief with what is said to be the first life membership card to be given any volunteer chief of the North Carolina Fire Chiefs Association.

Dentist Doubles as Fire Chief

Dentists are not uncommon in the volunteer fire service, but not many of them are chiefs; and of these, few have headed departments for 25 years, as has Dr. Jacob W. Rohrer, dentist-fireman of the village of Granville, Ohio.

"Doc," as he is called, is getting along now and doesn't leave his patients in his office to nurse their aching cavities while he dashes out to fires as he used to do, but he's still active and, like the proverbial "fire horse," is usually ready to go when the siren sounds despite his 75 years.

Dr. Rohrer came to Granville back in 1902 to coach athletics at Denison University, located in that community. He coached there during 1906-7 and 1907-8; then coach Rohrer gave way to Dr. Rohrer, who set up his dental office there.

The good Doc helped out the then rather, creaky volunteer fire fighters' unit as best he could, but it wasn't until 1927 that the present efficient Granville organization was set up.

That year there was a bad fire which burned out several buildings. The apparatus, and ancient hose cart, simply couldn't measure up to the emergency and it was decided that the community had better get some better equipment. So the little department bought its first motorized piece of apparatus. And that was when Dr. Rohrer was elected chief, a post he has filled ever since.

The Doctor is proud of his department. "We have three trucks now," he boasts, three pumpers, and a 30-man squad. A $16,000 pumper was bought last year with money raised by volunteer public subscription.

The Granville Volunteer Fire Department has contracts with the village of Granville, Granville Township, Denison University and the northern section of Union Township. It also has a mutual aid pact with other fire departments in Licking County, Ohio.

Dr. Rohrer helped organize the Licking County Volunteer Firemen's Association and served as its president for six years. It now includes 220 members from the nine fire departments in that county.

The Granville Fire Department made 53 runs last year, according to the chief. The town's telephone directory lists several members to be called in case of fire, he explains, including his own telephone number. When an emergency call comes in, the Doctor (or the drugstore, or the telephone office, or another place whose number is listed), pushes a button to sound the siren, located in the middle of the town.

All the volunteers have permission of their employers to drop whatever they're doing when the siren sounds, and head for the fire house on Prospect Street. Five male Denison U. students enjoy rushing out of class to serve as enrolled fire fighters.

Chief Rohrer recalls that 92 men have taken the pledge as volunteer firemen since 1927, and not one of whom has ever received a cent for his services. Who answers his fire calls when office work prevents his rolling, or when he's out of town? Chief Rohrer has three assistant chiefs and proudly boasts "the boys are all well trained."

Bond President M.I.T. Alumni

The Alumni Association of the Massachusetts Institute of Technology, Cambridge, Mass., has named Horatio Bond, chief engineer of the National Fire Protection Association, president of the alumni body for a term beginning July, 1953.

Bond is a member of the Alumni Council and Alumni Fund Board of M.I.T. and secretary of the class of '23.

Obituaries

Chief Baldwin Dies at Fire

Chief Harvey L. Baldwin of the Kansas City, Mo., Fire Department collapsed and died, apparently of a heart attack, on March 21, last, while directing twelve fire companies struggling to control a wind-whipped blaze at the Penrod, Jerden & Clark lumber plant, that city.

His death was at first attributed to electrocution; at the time the chief had been working with two of his men pulling some fallen power lines out of the way with a rope. Witnesses said he paused and kneeled down, apparently to rest briefly, then collapsed. Artificial respiration was at once applied, but he never recovered. Francis Wornell, director of safety, said the Chief had suffered a heart condition, which had not been fully diagnozed or treated.

The fire destroyed a large shed containing cut walnut and oak lumber valued at $250,000, a kiln storage house and large pile of logs containing over 300,000 board feet of wood with a mar-

set value of $75,000 to $100,000.

The blaze apparently started from a grass fire along a railroad right of way and communicated to the cut lumber. Winds of up to 60 miles an hour were blowing toward the plant at the time.

It being Saturday, few employes were on hand and the fire rapidly spread from the lumber shed to a smaller kiln and lumber storage pile before fire fighters arrived. First-due companies were quickly joined by reinforcements called on multiple alarms. They were unable to prevent almost total destruction of the shed and kiln, but managed to prevent involvment of the veneer mill, although its cupola caught fire and was damaged.

The 49-year-old chief had only recently returned from participating in the Memphis Fire Department Instructors Conference and shortly was to assist a Committee on fog tests in experiments to be conducted in his own city.

Chief Baldwin succeeded Chief John T. Lynch, retired in March, 1950, being the youngest man ever to hold the post. He had been District Chief from 1944, and on the department since 1923. He occupied positions of substitute fireman, motor driver-engineer and drillmaster of the department school. He was known for his courage and personal leadership. He had been injured many times in the course of his duties.

The chief served six months in the air force in World War II, setting up a fire department at Moore Field, Texas. He took particular interest in disaster and first aid work and participated in many firemen's athletic contests. He was a member of the International Association of Fire Chiefs and other fire service organizations. He leaves a wife, four sisters and a brother.

Former Chief Hiser Dead at 83

Former Fire Chief Charles Hiser, of the Adams, Mass., Fire Department, died March 7, last. He retired in 1943 after thirty years service with the department, twenty years of it as chief. He was an Honorary Member of the New England Association of Fire Chiefs and was widely known in the fire service as a capable, progressive officer.

Oil Stoves Are Anathema

Oil stoves are anathema to the members of the East Chicago Heights Fire Department. One proved even more tragic to 5-year-old Freddie Johnson of that community, who died in a fire in his converted boxcar home on March 3, last, when the oil stove exploded and set fire to the "house."

East Chicago Heights firemen, who were called to the scene, had to stand by helplessly, while the boy died, and two younger children suffered burns. Three older children in the family escaped the flames.

The fire fighters' impotence was the result of an oil stove explosion in their own fire headquarters, two months before, which consumed the town's only fire apparatus.

According to Police Chief Nicholas Deluca, when he arrived at the fire, it was too late to call the Chicago Heights Fire Department, the nearest available fire force.

The boy's mother tried desperately to save her child. She and her husband were burned in the effort. They managed to get the younger children out.

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HALE Portable Pumping Units

	U. S. Gallons Per Minute	Disch. Press. Lbs. Per Sq. In.
FZZ	60 100	90 70
FZ	50 300	60 10
HPZZ	15 50	200 100

These 3 pumping "Workhorses" provide amazing volumes and pressures for efficiently fighting a great variety of fires. All three units are conveniently portable by two men; can be easily mounted or carried on any type of apparatus for fighting fires while in motion from booster tank; often used to pump from inaccessible water source into major pumper, or to fight fires direct.

(*Fire Pumps in All Standard Capacities*)

Write today for Circulars on Models FZZ, FZ and HPZZ—at least one of which is sure to meet your fire-fighting requirements. Ask for demonstration; no obligation.

HALE FIRE PUMP CO.
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Why So Many Firemen Insist on "JANESVILLE" Quality.

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The Voice of Authority!

No longer is it necessary to yell and shout in order to be heard, for *The Audio Portable Electric Megaphone* will amplify your voice 2500 times!

Audio megaphones enable you to direct your men clearly and distinctly at fires, even in smoke-filled buildings or rooms, guide rescue crews, assist on the training grounds, and give instant warning in case of danger. They have been approved for Civilian Defense requirements.

Write or wire for full details and our new low price!

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The ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

SMOKING IN BED

THE subject for this Round Table, "Smoking in Bed" is of universal interest to the fire service, just as it is a universal threat to life and property throughout the nation. For this reason, replies to the five questions asked a representative selection of fire chiefs, have been numerous—and enlightening.

Concerning the fires started and lives lost, it is apparent from the early returns that such fires are on the increase, with this exception: where there are state and local laws that have teeth in them, there appears to be a falling off in such incidents, at least in hotel and rooming house occupancies. This is an encouraging note. However, viewed broadly, smoking in bed is everywhere a menace—the most deadly menace in the habitational classifications. Not only do chiefs find that smokers are setting themselves on fire, but their smoking is responsible for many costly building blazes, some of them fatal to many people.

One point emphasized by many chiefs is that the total number of bed fires started by careless smoking is greater than the actual number reported because, notwithstanding protests to hotel and rooming house proprietors, the fact remains that only a small percentage of such fires are reported to the fire department (these usually being the "workers" that get out of hand of the employees). In homes, too, many householders dislike calling the fire department for such fires and until and unless they do the department has no record of the incident. Therefore, it would appear safe to assume that the problem is more serious than the "statistics" would appear to indicate.

Another detail disclosed by the survey is the fact that there seems to be an unholy alliance between drinking and smoking when it comes to injurious or fatal fires in this category.

Concerning laws and ordinances opposing smoking in bed it is surprising how many states and communities have no regulatory measures governing this hazard. Many chiefs frankly confess inability to get to first base in the effort to secure such legislation. One tells how his city's legal minds ruled that "a man's home is his castle" and wherever he abides, hotel, hospital or dwelling nobody has a right to attempt to "regulate" his life. Other chiefs, more fortunate, have secured stringent regulations and are slapping unfortunates with fines (sometimes having to wait until they get out of the hospital—if they do).

Some chiefs do not believe state or local laws go far enough. One chief, not satisfied with a measure that limited the penalties to fires caused in hotels, lodging houses and rooming houses" secured broadening of the statute to include "and other places of public abode."

Another item of agreement is that ordinances should make it mandatory that the fire department be notified of *all* such fires in places of public assembly.

Finally, there is agreement on measures to be taken to sell the idea of this hazard to the home folks, and others. Cooperation of proprietors is required; school children can do a good job on the parents, once the kids are "sold"; the newspapers and broadcasting stations — in fact, all media that reaches masses of people, can be employed advantageously.

HERE IS THE QUESTION

1. **Have any lives been lost, or fires started, in your city in recent years as a result of smoking in bed? If so, how many cases are on record, particularly during the past two years.**
2. **Have you any city ordinance or state law designed to reduce this hazard?**
3. **If so, what are the provisions of such ordinance or law?**
4. **Has it proven effective in reduring the number of fires caused by smoking in bed?**
5. **What other measures do you feel would be helpful in checking this hazard?**

Readers are invited to take part in this discussion which will be continued in the May issue. Address replies to Round Table Editor, FIRE ENGINEERING, 24 West 40th Street, New York 18, N. Y.

Discussion of the Topic

Albert W. Fisher, Chief, Johnstown, Pa.: Smoking in bed was the cause of nineteen building fires in Johnstown during 1951 and 1952. In one case a woman died due to suffocation; in another instance a woman suffered a fractured back when she leaped from the second floor of a dwelling during a fire caused by smoking in bed.

Our city has no ordinance to combat the practice. Neither has any state law been designed for the purpose. However, I feel that every municipality should have some regulation through which offenders could be penalized for smoking in bed in hotels, rooming houses, etc.

One outstanding factor which has been helpful in fighting the "smoking in bed" hazard in Johnstown is the "Fire Marshal Plan" which has been introduced into all our city public and parochial schools. Of the 1,600 hazards which the school children have corrected to date, 116 were cases in which the children pointed out the folly of smoking in bed and had the habit discontinued. No sensible parent could possibly ignore a child who can explain the dangers of such a habit.

Edward J. Blohm, Chief, Detroit, Mich.: During the past two years twenty-five lives were lost in Detroit as a result of fires caused by smoking in bed (12 in 1952 and 13 in 1951). Of course, many more fires start from this cause but are detected in sufficient time so that no injuries or deaths result.

We have a city ordinance providing penalties for causing fires in hotels, rooming houses, etc., through careless smoking, as well as a State act along the same line.

Section 4b of Ordinance No. 128-E provides that "It shall be unlawful for any person in smoking or attempting to light or to smoke a cigarette, cigar, pipe or tobacco in any form for which lighters or matches are used or in the use of flammable liquids, to set fire to any bedding, furniture, curtain, drape, house or household furnishings in any hotel, rooming house, or public lodging house."

Section 496 of Act No. 17, Public Acts of 1947, State of Michigan, reads as follows: "Any person who shall carelessly, recklessly or negligently set fire to any hotel, rooming house, lodging house or any place of public abode, or to any bedding, furniture, curtains, drapes, or other furnishings therein so as to endanger life or property in any way shall be guilty of a misdemeanor.

"In each sleeping room of all hotels, rooming houses, lodging houses and other places of public abode, a plainly written notice shall be posted in a conspicuous place as notice of the provisions of this act."

While the ordinance and the State act do not specifically apply only to fires caused by bed smokers, about 98 per cent of court complaints filed for violation of these regulations have been

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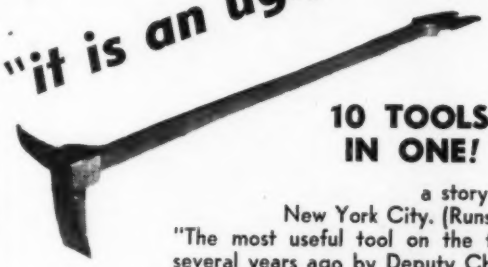

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against bed smokers who accidentally ignited mattress and bed clothing.

Our ordinance has been in effect for six years and during this period the number of fires in hotels serviced by our department has ranged from a high of 547 in 1948 to a low of 371 in 1952. Practically all of these are fires confined to bedding and mattresses in guest rooms. During the same six-year period, 1,724 persons were cited in court for having caused fires in hotels, rooming houses, through careless smoking. There were 345 such cases in 1948 compared with 226 in 1952 which follows approximately the same percentage decrease as the number of such fires.

Probably the one single measure that would be of most help in the case of confirmed "bed smokers" would be fireproof mattresses and bedding. From our experience, many such smokers must be protected against themselves, for we have cited numerous "repeaters" in court who have caused as many as three fires in different hotels within a short time through smoking in bed.

Harry F. Johnston, Chief, Bureau of Fire Prevention and Protection, Milwaukee, Wis.: Our records do not break down the causes of fires to indicate whether a person who died as the result of a fire was smoking in bed. However, the Milwaukee County Coroner's report for 1952 gave one death by asphyxiation due to burning of bedding only. There have been fires in some hotels and rooming houses caused by smoking to which the fire department was not called so we have no record. We have learned of these fires indirectly some time after they have occurred.

We have a city ordinance and there is a state law designed to reduce fires caused by careless smoking.

Section 47-23, Chapter 47, Fire Prevention Ordinance, City of Milwaukee Code, provides the following: "1. Any person who by smoking or attempting to light or to smoke cigarettes, cigars, pipes, or tobacco in any manner in which lighters or matches are employed shall in a careless, reckless, or negligent manner whatsoever, whether willfully or wantonly or not, set fire to any bedding, furniture, curtains, drapes, house, or any household fittings, or any part of any building whatsoever, so as to endanger life or property in any way or to any extent shall be guilty of violating this section and shall, upon conviction, be subject to a fine of not less than one dollar ($1.00) nor more than fifty dollars ($50.00) together with costs, and in lieu of payment thereof shall be imprisoned in the House of Correction or County Jail for not less than one (1) or more than fifteen (15) days.

"2. In each sleeping room of all hotels, rooming houses, lodging houses, and other places of public abode, a plainly printed notice shall be posted in a conspicuous place advising tenants of the regulations of this section."

The provisions of the State law are relatively the same as our ordinance.

In our opinion it has reduced the number of fires caused by careless smoking.

Fire prevention education would be helpful in checking this hazard as well as other fire hazards.

On March 19th and March 24th, our newspapers carried items about two men who were fined for violating the city fire ordinance. One man apparently fell asleep while smoking in bed and had to be treated for first degree burns on the bottom of both feet. He was fined $25.00. The other man accidentally set fire to a chair in an apartment. His fine was $50.00.

Don E. Miesner, Secretary, Fire Prevention Bureau, Louisville, Ky.: There were no lives lost as a result of smoking in bed in 1951 or 1952. There were 67 fires in 1951 and 65 fires in 1952 as a result of smoking in bed. In 1951 we secured 48 convictions and collected $2,614.00 in fines. In 1952, we secured 54 convictions and collected $2,695.00 in fines.

We do have an ordinance which provides the following:

"Section 1. That it shall be unlawful for any person willfully, wantonly or carelessly to use matches, lighters or smoking material, or dispose of lighted matches, cigarettes or cigars, or live embers of any smoking material, so as to result in the setting fire to any part of any building, or to any furnishings or fixtures therein, in which rooms are occupied by the public as sleeping accommodations.

"Section 2. Any person violating this ordinance shall upon conviction be punished by a fine of not less than fifty dollars ($50.00) nor more than one hundred dollars ($100.00), or by imprisonment of not less than ten (10) days, nor more than thirty (30) days, or both so fined and imprisoned."

We have found this ordinance has been extremely effective. Our successful results with this ordinance, have led to a striking reduction in the number of such violations.

Publicity for the ordinance and its penalties is always effective. We have made every effort to let the public know the law exists before they are made aware of it through enforcement. Publicity during Fire Prevention Week—placards, handouts, leaflets, etc.; and in year-round talks to schools, clubs, organizations, industrial plants, hotel, hospital and rooming house personnel. And lastly, by seeing that the ordinance is enforced.

H. A. Smith, Chief, Honolulu, T. H.: No lives have been lost as a result of smoking in bed during the past two years. In 1951 we had 22 such fires and in 1952, 21 fires.

I cannot see how a law prohibiting smoking in bed could be enforced. My only suggestion is publicity and more publicity relative to the danger of smoking in bed.

Clyde Dunn, Chief, Omaha, Neb.: In 1951 we had a total of 85 fires caused from smoking in bed, 58 of which were in hotels and the balance in apartments or dwellings. No deaths resulted. In 1952 we had a total of 57 fires caused from smoking in bed, 36 of which were in hotels and the balance in apartments or dwellings. Two persons died as a result.

We have just recently passed an ordinance prohibiting smoking in retail or department stores, but have not been successful in our attempt to have an ordinance passed regarding smoking in bed in hotels or public buildings, or buildings such as apartments, tenements, rooming houses, etc., because according to our legal depart-

ment that would be contrary to our constitution and the attitude that "one's home, wherever it may be, is one's castle."

In the case of hotels, we do suggest to the operator that he can file a complaint and have the offender arrested on the public nuisance charge if he desires. It does seem that in the case of a hotel, a public safety law or ordinance could be adopted by separate cities that would be effective.

One of the above mentioned deaths happened as a result of a patient in one of our local hospitals smoking in bed and accidentally igniting a window shade next to his bed, causing suffocation. As a result there has has been some activity on the part of several persons regarding the elimination of smoking in hospitals but this is a problem that is too complex to arrive at a suitable solution. Visitors are not allowed to smoke in any hospital as a matter of hospital policy, but it is difficult to limit a patient or keep watch over each and every patient.

Lorenzo J. Jones, Chief, Duluth, Minn.: One life has been lost from smoking in bed.

In 1951 we had 15 fires resulting from this cause and in 1952 it dropped to five.

The State of Minnesota has a law to reduce this hazard. It reads as follows:

"An act relating to fires caused by smoking and providing penalty therefor.

"Be it enacted by the Legislature of the State of Minnesota:

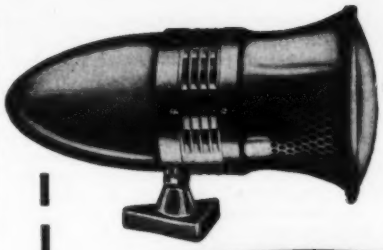
"Section 1. Any person in any hotel, rooming house, lodging house or other place of public abode, who, by smoking or attempting to light or to smoke cigarettes, cigars, pipes or tobacco, in any manner in which lighters or matches are employed, shall in a careless or negligent manner set fire to any bedding, furniture, curtains, drapes, house or any household fittings, or any part of any building of the class hereinbefore set forth, so as to endanger life or property in any way, or to any extent, shall be punished by a fine of not more than $100 or by imprisonment for not to exceed 90 days.

"Section 2. In each sleeping room of all hotels, rooming houses, lodging houses, and other places of public abode, a plainly printed notice shall be kept posted in a conspicuous place advising tenants of the provisions of this act."

E. J. Nixon, Chief, Hamilton, Ont.: One man died as a result of drinking and smoking in bed. He was asphyxiated. Another received serious burns from the same cause.

We do not have a city ordinance. Under the Criminal Code of Canada, the Provincial Fire Marshal's Office have laid charges pertaining to careless smoking in bed under the section covering negligently starting a fire.

I am of the opinion that there should be either a provincial or federal regulation making it an offense to start a fire as a result of careless smoking particularly in hotels, lodging or rooming houses, or any other place where there are a number of people residing. This would place the responsibility of careless smoking directly on the individual and if the proper publicity was given showing



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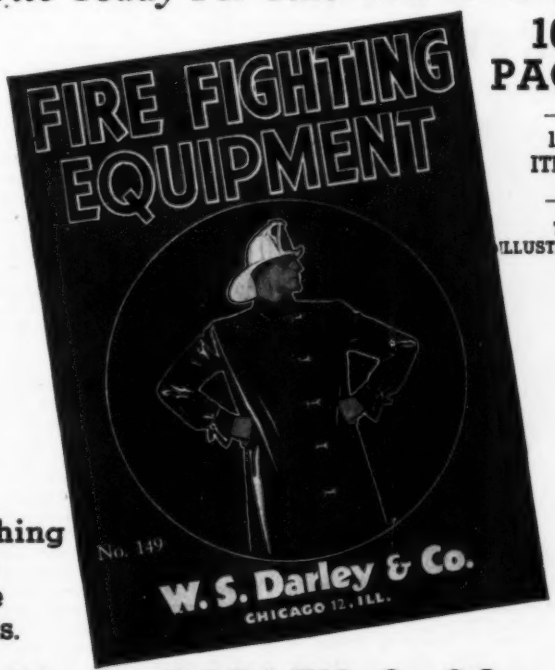

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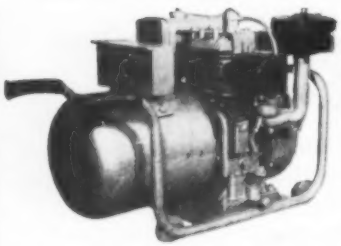

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the penalty for violation and posted in the above mentioned buildings, I feel it would tend to reduce this dangerous practice.

Arthur C. Green, Chief, Malden, Mass.: One life has been lost and eight fires started in this city during the past two years as a result of smoking in bed.

I believe the only way of checking this hazard is to educate the public by means of literature, the radio, television, etc.

* * *

The following replies are in answer to a previous Round Table discussion on responding to out-of-town fire calls.

J. C. Wilkerson, Chief, Augusta, Ga.: The Augusta Fire Department will respond to a fire call outside the city limits for a distance of five miles, provided the property owner in advance of making said call has paid an annual registration fee of $10.00; deposited in cash with the Chief of the Fire Department, the sum of $100.00, the amount necessary to pay for one fire call or deposited with the Chief of the Fire Department an insurance policy (Fire Department Service Clause) which shall provide for the payment to the City of Augusta in the event of fire in, on, or exposing said property, the amount of $100.00, the amount necessary to pay for one fire call. If the property to be registered consists of multiple buildings (manufacturing plants) or multiple apartment units, the registration fee shall be $25.00, this type registration being left up to the opinion of the chief.

When lives are involved, or schools, churches, convalescent homes, or charitable organizations, the Augusta Fire Department responds and no fee is charged. In addition, none of the above impairs the discretion of the Mayor of the City of Augusta or the Chief of the Fire Department to respond to fire alarms outside the city limits.

The water supply adjacent to the city limits of Augusta is unusually good, and when a person's property is located within a distance of 1,000 feet from a fire plug, the insurance companies cuts his insurance rate fifty cents a hundred, provided he makes an agreement with the fire department to respond to a fire alarm. Only in remote areas do we have to rely upon the water we carry in our booster tanks on the fire apparatus.

The City of Augusta has a paid fire department, and our personnel consists of 130 men.

Up to the present time, our system has proven most satisfactorily and is continuing to increase daily. We have approximately 3,000 people registered for this service.

C. W. Brennan, Chief, Chanute, Kans.: Chanute, Kansas, is a city of eleven thousand inhabitants, located in Tioga Township, Neosho County, nationally known because they have operated the City without city tax since 1930 due to the fact their electric light plant, wtaer and gas are municipally owned and supply the town as well as 85% of the outlying farms with electricity. Our fire department budget is paid by the earnings of these plants.

We have eleven paid firemen. We have two 750 GPM Seagraves; one 600 GPM Quad; two boats with 10 horsepower Johnson motors, the latter we used in floods in 1941, 1944, 1948, and 1951. We have a 500 gpm Peter Pirsch, closed cab, truck equipped with two-way radio which is used to protect the Township; we have a 200-gallon water tank, 2 booster reels with 300 feet hose on each, 1350 feet 2½-inch hose, 300 feet 1½-inch hose, all equipped with fog nozzles, also a goodly supply of wet water and mechanical foam.

We have a contract for fire protection with Tioga Township. Our agreement is a guarantee of $400.00 a year for twenty-nine runs, all over that amount costs them $15.00 extra for each run. Our contract with Canville gives us a guarantee of $300.00 a year for ten runs, or less, all over that amount costs them $30.00 a run.

Nelson C. Gulvin, Secretary, Seneca Castle Fire Company, Seneca Castle, N. Y.: We answer calls for help outside our fire district and make no charge for this service. We do not accept donations to the fire company and have received quite a sizable sum in this manner since the formation of our volunteer company four years ago.

We feel that although we do not charge for these out-of-district calls we are repaid for them whenever we may need help ourselves. Since most of the areas bordering our district have fire districts of their own there is ample opportunity for use of the mutual aid system.

We depend mostly on the water carried on our apparatus, a 700 gal. booster tank on 500 g.p.m. pumper and a 1000 gal. tank truck. We can, however, draw water from any accessible well, cistern, or brook with two portable pumps; one carried on the pumper and the other carried on the tanker. With one portable pump pumping directly into the pumper from a well or cistern at the fire scene and the tanker relaying water from the nearest reliable source, such as a brook, we have been able to keep water constantly on a fire.

We have a volunteer company numbering about 75 men a good part of whom are active.

J. Bauer Small, Chief, Farmington, Me.: Our department is entirely volunteer and is maintained by the town. We answer all calls in the ten square miles of the town at no charge to the resident. However, the men are paid at the rate of $1.50 per hour or any fraction of an hour.

For rural fires we have a 1950 Chevrolet 750-gallon tanker with both booster and 1½-inch lines; a 1934 Maxim 750-gallon pumper with a booster tank of 225 gallons, 1500 feet of 2½-inch hose and 300 feet of 1½-inch hose.

Our big trouble is responding to aid surrounding towns. We cannot legally go into another town and expect to get paid for our services unless we are called by the chief of that town or one of the selectmen. We have never had too serious trouble, but sometimes on receiving a call from the resident, who can't locate any town official, we go in the spirit of brotherly love and keep our fingers crossed in the hope the town officials will sanction our action.

We charge a flat rate of $25.00 for the tanker, $25.00 for the pumper plus $25.00 an hour for pumping and the regular hourly pay for the men. We usually send at least ten men of our 25-man department.

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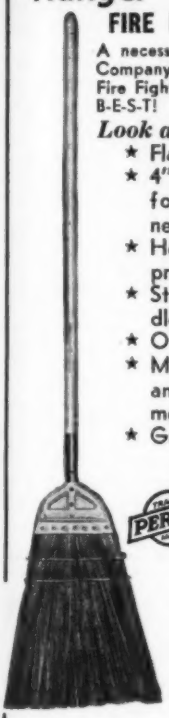

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Our system works very satisfactorily, and incidentally, we have one of the highest insurance ratings given to a volunteer fire department.

Edmund Walainis, Chief, New Haven, Mich.: Our department consists of twenty-one volunteers. We have two pieces of fire fighting equipment consisting of a 1950 GMC truck with a 500-gallon water tank and a portable pump and a 1945 Dodge truck with a 350-gallon water tank and a portable pump.

We use the General Motors truck for all rural fires. We have contracts with Lenox, Chesterfield, Macomb and Ray Townships to furnish fire protection when needed. The cost for the protection is as follows: $300,00 guarantee plus $75.00 per run for full townships and $150.00 a year plus $75.00 per run for part townships.

Until 1945 we had a 1926 Model T that we used only for village protection, but with the ever expanding of the rural areas, we found that townships wanted protection and so we bought better equipment to furnish same. We cover an area of about 150 square miles.

We depend largely upon the amount of water we carry, although with the mutual aid arrangements we have with the cities of New Baltimore and Richmond and Clinton Township, we have had to call the 1000-gallon tanker of Clinton Township. In another instance we had to use a milk truck and milk cans, making seven trips, thereby helping to save a farm home from total destruction.

We have found that our arrangements with the rural areas is very satisfactory and also very beneficial as far as our department is concerned.

A. E. Ball, Chief, Pueblo Rural Fire District, Pueblo, Colo: In 1948 there were several fires within a short distance of the city of Pueblo and a great controversy arose from the fact that the city department was answering calls outside the city. Consequently a few civic minded residents of the area lying directly east of the city limits proceeded to organize a fire district. Our boundaries run parallel with the river and cover an area approximately 6 miles by 15 miles.

By June of 1949 we had purchased one Howe 500 g.p.m. pumper carrying 500 gallons of water. We were able to hire a Chief and three paid Firemen. After losing a large garage and all of its equipment, which was estimated at $150,000, adjacent to the city, the citizens of the Rural Fire District found that it would be necessary, after such a big mishap, to have more equipment for the department. This equipment was purchased and put in service in December 1952.

Our equipment at present writing consists of two Howe 500 g.p.m. pumpers, each carrying 500 gallons of water, 1 Ford front-mount carrying 300 gallons of water, one Chevrolet pick-up equipped with radio, one 500 g.p.m. war surplus pump which will be mounted on a truck chassis.

Our personnel includes a Chief, an Assistant Chief and seven paid Firemen, as well as a well organized volunteer Junior and Senior Team. Our equipment also includes a 1000 lb. trailer and 12-foot motor boat.

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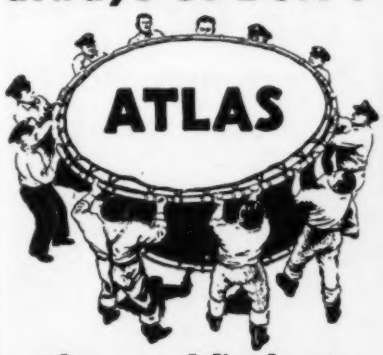

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RULES GOVERNING FIRE PREVENTION AND FIRE PROTECTION. Published by Association of American Railroads, Fire Protection and Insurance Section. 148 pages and cover; pocket size; loose-leaf, with imitation leather binding; 60 cents per copy.

The Association of American Railroads, which has for many years been outstandingly fire prevention conscious, and which has issued some of the most comprehensive instructional information on fire control, has published the first booklet of its kind, primarily for distribution to chief operating officers and members of the Association.

The "booklet," as the Association terms it (actually it is more of a manual or textbook) was issued after an extensive canvass of the railroad industry revealed a need for a set of rules dealing with fire hazards—some of which, it should be mentioned, are particularly identified with the railroads.

The publication is divided into two sections, with the first portion including 126 fire prevention rules covering buildings, structures and incidental equipment; electrical, gas, gasoline and oil properties; miscellaneous heating equipment, and materials, installations and practices.

The second section of the text lists 65 fire protection rules covering the use and maintenance of portable extinguishers, fire hose and fixed equipment and describing general fire protection practices.

FIRE PROTECTION YEAR BOOK, 13th Edition. Compiled by Geoffrey F. D. Pratt; published by Benn Brothers, Ltd., Bouverie House, 154 Fleet Street, London, E.C.4; 380 pages; price 12/6d inc. postage.

The 1953 edition of a detailed technical record of fire-fighting equipment available to deal with normal and emergency conflagrations anywhere in the British Isles. Not only does it list all the Public Fire Brigades, together with appliances, but similar records covering fire-fighting units wholly maintained by industry and private sources.

The Year Book, said to be the only text of its kind, also contains information about Fire Brigades in the Commonwealth and Empire, together with considerable legal and mechanical data of particular interest to all those in the British public services and industry who are concerned with fire safety. A diary section is also included. Although it deals primarily with British Fire Services and fire protection problems, the Year Book should find wide acceptance in this country.

DICTIONARY OF FIRE TECHNOLOGY. Edited by A. S. Minton and E. S. Calvert. Pub. for The Institution of Fire Engineers, 94 Southwark Bridge Road, S.E. 1 by Century Publications Ltd., London, Eng., 1952; 98 pages; hard cover; pocket size.

The editors have attempted to combine within a single, handy size volume the more important terms dealing with "the science of fire."

The volume's contents, although by no means completely covering the vast ramifications of fire fighting and fire prevention, do convey a good idea of their great variety and scope. Fire engineers and students of fire suppression have long affirmed that the modern fire fighter must be at least partially versed in many fundamental technical subjects and sciences. This Dictionary confirms that belief.

The subjects deemed appropriate for the Dictionary embrace Building Construction, Chemistry, Fuel Technology, and Combustion, Engineering (including Electrical, Mechanical, Hydraulic, Chemical and Marine), Metallurgy, Petroleum, Radio and Telephone, Simple Physics and Mathematics and Refractories.

Obviously the Dictionary could not hope to cover the nomenclature and glossaries of each of these technical subjects. The compilers, however, have managed to collate the more important and pertinent definitions of each. The chief deficiency, as this reviewer sees it, is that American students of the fire suppression will find many of the terms are peculiar to British interpretation. A cursory examination also indicates that some terms used in the British Fire Brigade Services are not included. Notwithstanding this fact, however, the tome should find a welcome place in the library of every progressive fire department.

SELECTION OF FIRE DEPARTMENT TERMINOLOGY, by Warren Young Kimball, 44 pages and cover, size 5½ x 8½ in.; $2.00. Published by National Fire Protection Association, 60 Batterymarch Street, Boston, Mass.

Every profession has its own vocabulary and terminology. The fire-fighting business is no exception. As it has grown over the years, new terms, new phraseology have developed to further confuse an already complex fire service terminology. Some expressions employed by fire fighters are apparently in conflict with terms used by the fire protection engineer.

The author has not attempted to present "a fire protection engineering jargon, but the language of the American Fire Fighter." Readers of one part of the country may have difficulty accepting terminology more familiar to the fire forces of a different section of the nation, but manifestly it is not feasible to attempt to encompass in a single volume all the fire service nomenclature of the whole country. It is quite possible also, that readers may find certain of their own phrases and idioms omitted from this text; nevertheless, it is a comprehensive and worthwhile contribution to the nation's fire service literature.

Chief Dozier Heads South Carolina Firemen's Association

On March 9 the South Carolina Firemen's Association, meeting in Sumter, S. C., named Fire Chief Ben Dozier of Florence, S.C., president of the organization. He succeeds Chief A. M. Marsh of Columbia, S. C., who headed the organization since it was founded ten years ago.

Re-elected were Chief Clarence Fischer of Orangeburg, S. C., vice-president, and Chief R. B. Colvin of Greer, S. C. secretary-treasurer.

Members attending the annual session heard talks by State Sen. Alfred Scarborough of Sumter; D. D. White Murphy, state insurance commissioner; H. Pierce North of the state association of insurance agents; Col. W. S. Bradford, Richland County civilian defense director, and Fritz Turner, an expert on liquefied gases. D. G. SPENCER

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World Wide Fire News

By Roi B. Woolley

Heavy Toll in Mexican Trolley-Car Collision

Between 60 and 70 persons were killed and 90 injured on Feb. 21, last, when two antiquated trolley-cars loaded to overflowing, crashed head on and burned in a Mexico City suburb.

By the 22nd, some 63 bodies, many burned or crushed beyond recognition, had been recovered from the wreckage. Rescue workers said others still lay in the ruins.

The crash occurred on the northeast outskirts of the city when the motorman of one car going down hill found his brakes had failed and was unable to wait for the uphill car to clear the single track.

Police said the rickety old vehicles had not been checked in months. Both cars were so crowded that some passengers were hanging half in and half out of the cars when the collision came.

Fire, which followed the smash, helped complete the destruction, burning many injured victims before they could be removed.

* * *

17 Jeep Fire Engines to Alaska

March saw 17 bright red jeep fire engines, manufactured by the Willys Overland Motors, Inc., on their way to Alaska for civil defense work.

Each unit is equipped with a "heat exchanger" device which converts Alaska's warm, volcanic spring water into cold water, better for fire fighting, it is said.

The Alaskan division of the Federal Civil Defense Administration, which bought the equipment, said that some of the engines will go immediately into use, with the others ready for emergency duty.

Although standard fire-fighting apparatus sometimes uses heat exchangers, which work in much the same way as the radiator of an automobile engine, such exchangers are geared only for keeping pump equipment from overheating under ordinary operating conditions.

Seems sort of incongruous to "cool" Alaska's waters for better fire fighting. We allus thought it was necessary to warm up the water, and the motor'n everything.

* * *

Hot Off the News Ticker

According to West German Police, fires which broke out March 13 in two archives rooms of the West Berlin de-Nazification court, were set. The archives contain certain records which some Nazis would like to destroy. The fires were extinguished quickly and only a few records lost. . . . In Vera Cruz, Mexico, Francisco Izquierdo, disguised as a Russian dancing bear in a carnival, was burned to death on Feb. 17 last, when a spectator lit a match to his tail. . . . When a tank containing 35,000 gallons of flammable fluid exploded at Brookley Air Force base March 5, near Mobile, Ala., 4 persons were hurt, two critically. . . . A bill authorizing Arkansas to enter into fire protection agreements with neighboring states was approved by the House 83-0 in February. Proposed compacts would facilitate fighting of forest fires, such as those that burned large sections of South Arkansas last year. . . . Fierce flames

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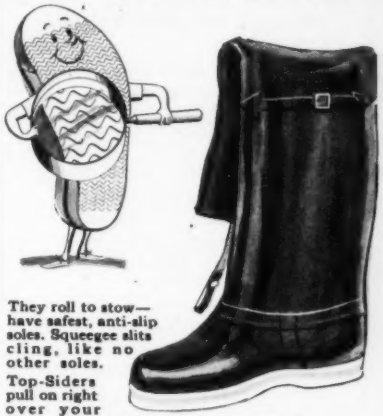

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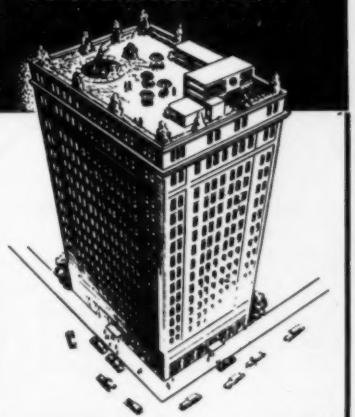

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swept through the Gaumont film studios in Paris, France, Feb. 28, driving back fire fighters and setting fire to neighboring homes. Firemen let the studio fire burn out. . . . Political incendiarism was the attributed cause of a fire that nearly wiped out the central public market of Cartagena, Columbia on Feb. 27, causing estimated damage of over $1 million. Police reportedly arrested a woman as she was pouring gasoline near blazing buildings "with the evident purpose of spreading the blaze." . . . A series of gunpowder blasts shook the northern Italy town of Gallicano (pop. 4,000) on Feb. 27. Twelve persons reported killed, ten injured. Blasts destroyed part of the S.I.P.E. Gunpowder Works, which produced for the Italian Government. . . . In Heilbronn, Germany, two workers were killed and another seriously injured in an explosion Feb. 27, at a factory making explosives. One factory building was almost destroyed. Coincidence? . . . Fire which broke out among Chinese squatters' huts in Tungtau village on Kowloon Peninsular, across the harbor from Hong Kong, Feb 24, made more than 2,000 persons homeless. . . . Police reported that an oil lamp upset by a dancing couple in a bar started the fire which on Jan. 30, last, caused $1 million loss in Pusan. Over 1,500 stores and homes were razed and 9,000 persons left homeless. Woman proprietor of the bar-restaurant, three waitresses and two customers were arrested. . . . In Dundee, Scotland, 50 men fought several hours in dense smoke on the night of March 8 to control a fire in the 7,238-ton British jute freighter "City of Colchester." Ship had only just arrived from East Pakistan with 31,000 bales of jute. Blaze broke out in a hold containing 14,000 bales, worth $560,000.

* * *

Seamen Injured in Ship Fire

Two ship's seamen were injured fighting a fire that broke out January 12 aboard the American President Lines freighter "President Pierce" about 90 miles east of Tokyo Bay.

The fire involved several of the ship's cargo holds and was fought entirely by the crew, which poured water into the below-decks space until the ship took a slight list.

Responding to an SOS, the Navy Command-communications ship "George Clymer," took off the two injured seamen and nine passengers, seven of them women. Navy pilots, who flew over the 7,925-ton vessel, reported the fire under control shortly before dark and the ship proceeding under its own power.

The ship, a C-3 type vessel built in 1945, left San Francisco for Yokohama with a general cargo, including military supplies. Cause of the fire was not disclosed, but possibilities of sabotage were considered.

Magistrate Jails False Alarmer

In Asbury Park, N. J., City Magistrate Eugene Capibianco sentenced Miles Smith, 52, of that city, to four months in the County Jail after the latter allegedly sounded a false fire alarm on Feb. 23 last.

Smith told the Court he sounded the alarm to attract attention of police after he was refused a bowl of soup and ordered out of a restaurant.

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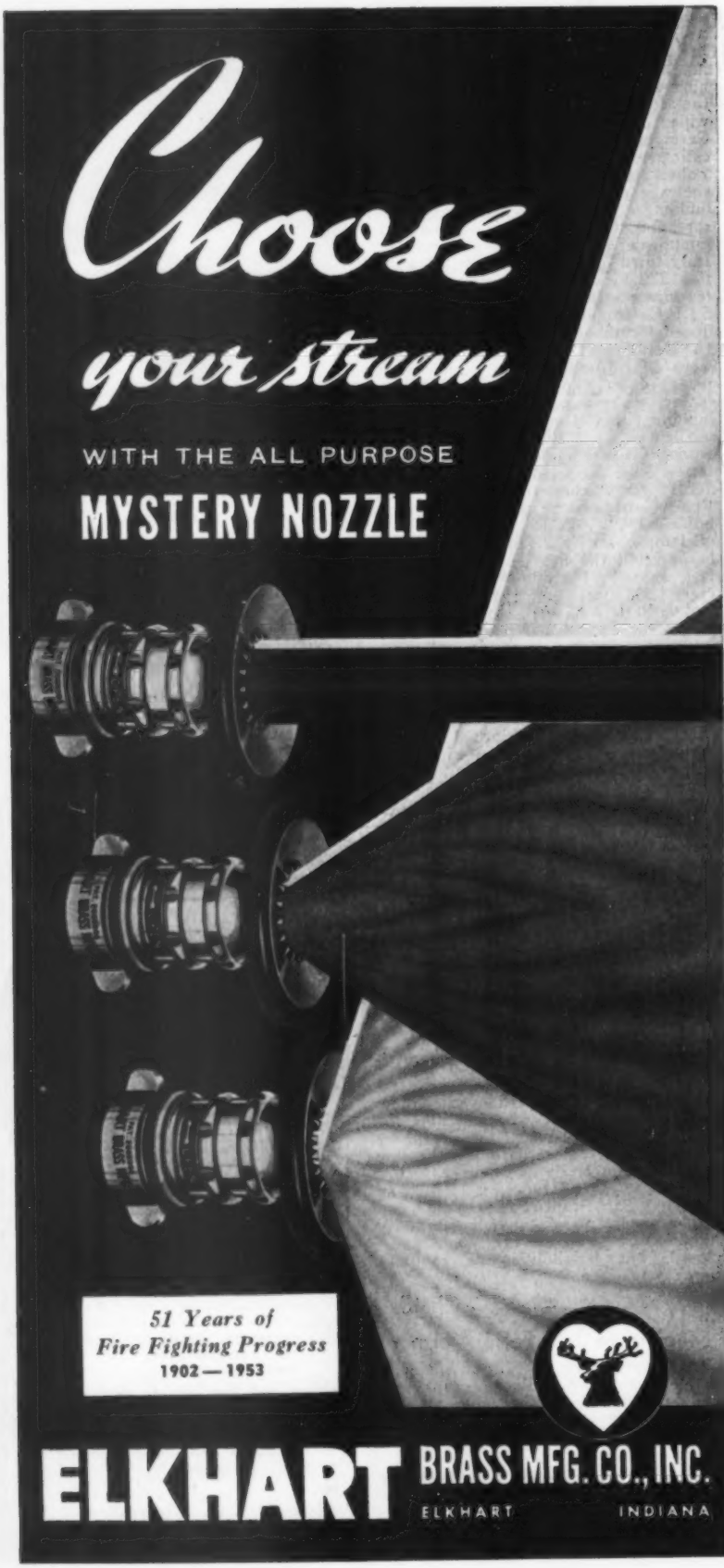

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